

# AMERICAN NURSERYMAN

*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

APRIL 15, 1949

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# AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

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## CONTENTS

A Method of Seed Cleaning.....	7	—Shade Tree Proceedings.....	34
By Thor K. Bergh.....		—Bulletins Received.....	34
Troubles with Peach Trees.....	9	Obituary.....	36
By M. B. Cummings.....		—William F. Allen.....	36
Industrialization in Practice.....	10	—Curtis K. Plumb.....	36
By Charles W. Hetz.....		—Anton Vandereem.....	36
Nursery Winners at Flower Shows.....	11	—Henry Bender.....	36
Plant Notes Here and There.....	18	Southwestern Notes.....	37
By C. W. Wood.....		Tile Drainage.....	38
Editorial.....	6	Cover Illustration.....	40
—The Passing of Estates.....	6	—Diospyros Virginiana.....	40
—Business Guides.....	6	Prize for Zinnia Name.....	41
—Packaged Plants.....	6	Shade Trees Sell.....	41
—Gladiolus Thrips.....	6	California News.....	42
Adams Nursery Marks Hun- dredth Anniversary.....	8	—March Meeting of San Joaquin Valley Group.....	42
Build Garden Center.....	8	—Santa Clara Bulletin.....	42
Bagworm Control.....	8	—Ventura, Calif.....	42
Nursery Winners at Flower Shows.....	11	—Santa Barbara, Calif.....	43
—International Show at New York City.....	11	—For California Farms.....	44
—Philadelphia Show.....	11	Catalogs Received.....	45
—New England Show.....	12	Winter Storage of B&B Evergreens.....	46
—Cleveland Flower Show.....	13	Rough-bark Disease of Pittosporum Tobira.....	47
—Michigan Flower Show.....	13	Pine Rust Forecast.....	53
—Greater St. Louis Show.....	14	Pest Control Guide.....	53
—Southern California Flower Show.....	14	New Products and Devices.....	54
—First California International Show.....	15	—Power Hoe.....	54
—Berkeley Camellia Show.....	16	—Device to Scare Birds.....	54
Colorado Firm Closes.....	16	—Devises Tree Digger.....	54
Walter B. Clarke (Portrait).....	16	—New Bulb Planter Shown.....	54
State Rosa Multiflora Produc- tion Increased.....	23	—Plastic Preservative.....	54
This Business of Ours.....	24	Registration of Citrus in Rio Grande Valley.....	56
—Exotic Evergreen Trees.....	24	Plant Disease Killers.....	57
Magazine Features Hastings Family.....	26	Ohio Short Course for Arborists.....	58
New Books and Bulletins.....	28	—Foundation Plantings.....	58
—Trees of Santa Barbara.....	28	—Tree Damage by 2,4-D.....	59
—Flower Lithographs.....	28	—Hermocallises.....	60
—Flowers in Color.....	28	Black Walnut Nontoxic.....	66
—Wild Flowers.....	30		
—Plants at Denver.....	30		
—Stone Mulching.....	31		
—Studying Hybridization in Natural Conditions.....	32		
—Flowering in Plants.....	33		
—Ecology of Plants.....	33		

# INDEX TO ADVERTISERS

Ackerman Nurseries	40	Fraser Nursery, Inc., Samuel	41	Onarga Nursery Co.	19
Acme Sprinklers	60	Fricke Co., J. E.	59	Oregon Nurseryman & Florist	44
Albrecht Nurseries, John	22	Galletta Bros.' Blueberry Farms	39	Ozarks Plant Farms	37
Allen Co.	57	Gallowhur Chemical Corp.	55	Pacific Coast Nursery	46
Alloway & Son, G.	40	Garden Shop, Inc.	60	Pacific Northwest Rose Nursery	47
American Bulb Co.	38	Gardner's Nurseries	67	Pallack Bros. Nurseries, Inc.	21
American Florist Supply Co.	56	General Steel Warehouse Co., Inc.	61	Palmer & Son, J. R.	36
American-National Bag & Burlap Co.	66	George & Son, James I.	22	Payne Dahlia Farms	33
Andrews Nursery Co.	40	Gold Chestnut Nursery	29	Perry Nursery Co., O. H.	36
Anna Strawberry Nursery	41	Golden Eagle Nursery	40	Peterson & Dering	45
Arborist Supply Co., Inc.	63	Gravelly Motor Plow & Cultivator Co.	27	Plant Marvel Laboratories	65
Ariens Co.	65	Grootendorst & Sons, F. J.	30	Plant Products Corp.	63
Arp Nursery Co.	37	Growers Exchange, Inc.	29	Pontiac Nursery Co.	40
Atkin's Sons, L.	66	Hagquist & Son Nursery Co.	35	Portland Wholesale Nursery Co.	47-66
Bacon & Son, Edward	39	Half Moon Mfg. & Trading Co.	30	Possum Hollow Nurseries	18
Bagatelle Nursery	26	Halpern Bros.	66	Premier Peat Moss Corp.	59
Bailey Nurseries, J. V.	32	Harrison Bros. Nurseries	39	Princeton Nurseries	29
Barclay, Hugh B.	24	Heasley's Nurseries	24	Rambo's Wholesale Nursery, L. J.	42
Bartlett Mfg. Co.	62	Herbst Bros.	1	Ravensberg Maurice C.	30
Blackwell Nurseries	34	Hess' Nurseries	18	Rich & Sons Nursery	46
Bobbink & Atkins	27	Highway Gardens	36	Roberts Nursery Co.	40
Bond Equipment Co.	59	Hill Nursery Co., D.	68	Robinson Sales Agency, E. D.	26
Botany Chemical Co.	62	Hill's Nursery	57	Rollers Nursery	35
Bountiful Ridge Nurseries	24-42	Hobbs & Sons, Inc., C. M.	32	Scammel & Son, H. B.	39
Boxwood Gardens	35	Hoogendorn, C.	30	Scarff's Sons, W. N.	40
Boxwood Nurseries	29	Horsford, William Crosby	25	Schroth's Nurseries	20
Boyd Nursery	35	Howard Rose Co.	46	Schupp Florist Supply Co.	64
Broadway Machine & Mfg. Co.	64	Humphreys Landscape Service	35	Schuykill Chemical Co.	62
Brookfield Gardens	28	Ilgenfritz Nurseries, Inc.	34	Scott & Sons Co., O. M.	39
Brouwer's Nurseries	26	Iltner Bros.	58	Semmes Nurseries	34
Brown & Son, Inc., A. J.	38	Jewell Nurseries, Inc.	32	Sherman Nursery Co.	34
Brown Bros. Co.	29	Johnston, William A.	45	Sherwood Nursery Co.	44
Brown Deer Nurseries	32	Kallay Bros. Co.	32	Shore & Co., Inc., J.	57
Brownell Roses	18	Keeler's Gardens	42	Sizemore, Charles	56
Bryant's Nurseries	33	Kopff & Weckworth	65	Slingerland, J. H.	56
Burr & Co., C. R.	29	Koster Nursery	26	Smith Corp., W.-T.	29
Burton's Hilltop Nurseries	32	Krieger's Wholesale Nursery	17	Sneed Nursery Co.	35
California Nursery Co.	38	LaBars' Rhododendron Nursery	27	Soil Research Laboratories	58
Carpenter & Co., George B.	62	Lake's Shenandoah Nurseries	32	Somerset Rose Nursery	38
Cassin, P. T.	37	Lansing Specialties Mfg. Co.	64	Stank's	44
Champion Sprayer Co.	65	Leghorn's Evergreen Nurseries	25	Sterling Bag & Burlap Co.	65
Chase Co., Benjamin	56	Leonard & Sons, A. M.	66	Stone Co., A. C.	62
Classified Ads	48-49-50-51-52-53	Lindig's Mfg. Co.	64	Sudbury Soil Test Lab.	60
Cloverset Flower Farm	5-31	Loewith, Inc., Julius	57	Summit Nurseries	40
Cole, R. M.	27	Lovett, Lester C.	22	Suncrest Evergreen Nurseries	24
Commercial Nursery Co.	42	Magee, Thomas J.	61	Tarlton Nurseries	36
Conigisky, B. F.	56	Matthews, E. C.	34	Tension Envelope Corp.	55
Corliss Bros., Inc., Nurseries	29	Maxwell, Bowden & Rice, Inc.	28	Tingle Printing Co.	66
Crystal Soap & Chemical Co.	63	Maywood Rose Nursery	46	United States Peat Moss Corp.	63
Curtis, Charles C.	24	McGill & Son, A.	47	Vanderbrook & Son, C. L.	18
Dayton Fruit Tree Label Co.	66	Meehan Co., Thomas B.	66	Van Herreweghe, W. E. & R.	30
Dee Insecticide Laboratories	58	Meyer's Nursery, M.	42	Verhalen Nursery Co.	34
Deerfield Nurseries	25	Michigan Fruit Growers Nurseries	41	Verkade's Nurseries	20
Del Rancho Fortuna	47	Midwest Metal Specialties Co.	56	Vistica Nursery, Louis	47
Doerfler & Sons, F. A.	47	Milton Nursery Co.	42	Vuyk Van Nes Nurseries	30
Doty & Doerner, Inc.	47	Mitsch Nursery	45	Want Ads	54
Driehuizen Bros.	30	Monrovia Nursery Co.	43	Waynesboro Nurseries	26
Edco Corp.	57	Moran, E. C.	38	Wayside Gardens Co.	31
Edwards Laboratory	56	Mount Arbor Nurseries	2	Weeks Whse. Rose Growers	45
Elfgren Nurseries	26	Mullins Plant Farms	42	Weller Nurseries Co., Inc.	33
Elmhurst Nurseries	33	Musser Forests, Inc.	22-24	Westerbeek & Sons, C.	30
Evergreen Nursery Co.	31	National Landscape Institute	43	West Hill Nurseries	41
Faddegon's Nurseries	25	Natorp Co., W. A.	34	Westminster Nurseries	25
Fairview Evergreen Nurseries	20	Neosho Nurseries Co.	41	Wiley & Sons, Inc., John	36
Farnam Equipment Co.	64	New Amsterdam Import Co.	57	Williams & Harvey Nurseries	65
Fertigator Co.	58	Newport Nursery Co.	32	Williams, Isaac Langley	27
Florists' Review	37			Willis Nursery Co.	23
Forest Nursery Co., Inc.	37			Willowbend Nursery	41
Foster Nursery Co., Inc.	39			Wonderland Nurseries	31
Fraser Nurseries, Inc.	35				

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## AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*

Joan L. Kilner, *Assistant Editor*

### Editorial

#### THE PASSING OF ESTATES.

Whatever may be the ultimate social or economic benefit from taxing out of existence the large private fortunes amassed in earlier years and preventing the acquisition of such large wealth in the future, the effect on ornamental horticulture is likely to have its disadvantages.

Many of the families possessed of such fortunes maintained private estates which provided, besides show places for their owners, incentives to several branches of horticulture. Through the desire to have something finer, something different, something more beautiful, expert gardeners were trained. The assistants to superintendents went out after such training to surpass their predecessors or at least to rival them. Not a few entered the public parks' service and notably served the public there. Others made their mark in the commercial field. The wide knowledge and thorough training in horticulture of the superintendents of leading private estates were acknowledged. They could confine their efforts to that direction without the financial cares of the commercial man.

Incentive was provided also to plant hunters and to plant raisers. This was a stimulant to commercial enterprises; the achievements of the famous old English firm of Veitch were won in providing new and rare plants for the nobility and landed gentry of that country—who now are forced to close their gardens and split up their estates by sale, or else to offer them as a gift in trust to the government in the hope that it can perpetuate some of their glory.

Of the staple plants as well, the private estates were large buyers, and it is a question whether so many can be sold to the residents on the small tracts or building lots into which the estates have been or are being subdivided.

In the world's trend toward socialism, the government is presumed to carry on the functions of the earlier "barons," created either by king or industrial wealth. To that end we have public libraries, art museums, parks, arboretums, botanical gardens and the like. But in number they are far less than the estates; in number of persons trained in ornamental horticulture they produce fewer; in plant

collections they cannot do what the rich hobbyists did. Governments, municipal and federal, are not generous in allocation of funds for these purposes.

Enough optimism is left to the editor to believe that the world is headed in a direction leading to a fuller life for the greater number of people. Human endeavor has a way of filling deficiencies as they appear, and some means will come to light to provide those benefits to horticulture once given by the private estates now passing. Perhaps it will be through our commercial nurseries, for this field has its plant hobbyists and collectors. Certainly, in number and in volume of business, the commercial nurseries are expanding. With larger opportunities come new responsibilities.

However they are replaced, the big private estates and their splendid gardens, here and abroad, leave a vision of grandeur for those who have seen them in their prime and a feeling of sadness, temporary though it may be, at their passing from our ken and the sight of the new generation.

#### BUSINESS GUIDES.

Sometimes it is easier to sense the current feeling of business than it is to obtain actual facts as to what is happening. This is one of those times. One feels in the air the psychological reaction of businessmen and consumers to the present situation, whether political or economic in its cause.

While no more than a moderate slowdown in business has made itself felt in most lines, the current unsettlement is due to the feeling that it may be only temporary, on the one hand, or it may develop into something of larger proportions, on the other.

Examination of the underlying economic factors to test which view is more likely to be the fact finds good reason for the belief that the country will continue to do a large volume of business and that increasing economy of operations may offset certain higher costs, including wages. Such efficiency will be brought about by a better rate of production as the rank and file of workers place more value on their present jobs and are not so sure that another just as good can be had elsewhere if they quit to look for it. Unemployment at present is confined to the least efficient workers, who are always the first to be laid off.

The indexes of business published

by the federal government and other agencies are from one month to six months in compilation. So it will be some time before we are aware just what is actually happening. Perhaps by that time the psychological factor will have vanished, and we shall know where we are going, anyway. In the meantime, the average businessman can lay plans for going ahead with at least his usual sales activities, though he should realize the time is unfavorable for speculation.

So many political factors enter into the appraisal of the current business situation that it may be some time before firm opinions reach far into the future. The nursery industry continues favorable in its outlook, with the public in possession of record savings and the demand for residential construction still unfilled.

#### PACKAGED PLANTS.

Apparently the days of labor shortage have brought increased interest in packaged shrubs and perennials from retail nurserymen and garden supply stores—judging from the increasing number of inquiries for sources of supply.

These inquiries come from all corners of the country. While the editor has a list of some firms known to supply packaged shrubs and perennials to the trade, some areas are not well represented on it. If your firm handles anything in these lines, drop a post card to the editor to be sure your name is on this list.

#### GLADIOLUS THRIPS.

Nurserymen who buy gladiolus bulbs for retail sale should be certain that they are free of thrips. Some bulb growers will provide a statement or guarantee that the bulbs have been treated for thrips. The insect winters over on the bulbs and multiplies rapidly in warm weather, with consequent destruction of bloom.

If you are not certain that your bulbs have been treated, you can dust them with a five per cent DDT dust. One ounce of the dust is enough for about one bushel of bulbs if thoroughly applied. It may be put on with a hand duster, or the bulbs and the dust may be put in a container and tumbled about so that each bulb has a coating. Such treatment will avoid complaints from dissatisfied customers.

# A Method of Seed Cleaning

By Thor K. Bergh

The cleaning of seeds is usually an important job at most nurseries, but is often a tedious time-consuming task. The primary purpose for cleaning seeds, of course, is to facilitate handling and storage, and often to bring about more uniform as well as higher germination. Wherever seedings are made with mechanical seeders, either in rows or in beds, it is essential that seeds be thoroughly cleaned and dried. In the case of such seeds as red cedar, and in spite of the seeding method to be used, it is not only important that the pulp be removed, but also that the waxy, dark brown coating found on the seed itself be removed. If this waxy coat is not removed, the seed remains more or less impervious to moisture, which results in poor and spotty germination.

The cleaning of seeds involves mainly the fleshy fruits. The fleshy fruits are classified into several groups. They are the berries such as the grapes and gooseberries, the drupes or stone fruits such as the cherries and plums, the pomes such as apple and pear, the aggregate

fruits such as raspberry and the multiple fruits such as mulberry. These are all fleshy and juicy in varying degrees and are messy to handle, store, ship or sow unless properly cleaned by any one of several methods.

One method of cleaning which has been successful at the Soil Conservation Service nursery at Winona, Minn., is the processing of seeds in a hammer mill. The machine used is a Fairbanks-Morse, model 28T, mill having solid hammers. The bottom half of this mill is fitted with a heavy screen that can be easily removed and replaced with screens having various-size holes. Care must be taken so that the proper screen is used for the particular seeds being cleaned. The holes should be just a little smaller than the seed itself so that the cleaned seed is not lost.

A charge of about one-half to one bushel of fruit is dumped into the mill, which is then turned at the slow speed of about 350 to 400 r.p.m. Higher speeds result in the seeds' being crushed or pulverized. A copious amount of water is allowed to run from a garden hose or similar outlet into the mill as it turns. The mill should stand on a solid foundation, preferably of concrete, built in such a way as not only to support the mill,

but also to cause the water and juices to flow away from the scene of operations as the fruits are cleaned. The fluid that runs out of the bottom of the machine is at first very turbulent, but within five to ten minutes clears up as the fruit juices and macerated pulp are washed away. The machine is then stopped, and the charge is dumped into a screened box, which should be available in a size convenient to place under the mill when the screen is removed and the seeds are discharged. The screen can then be replaced an another charge of fruit dumped into the mill.

At the time of discharge such debris as skins and stems comes out with the clean seeds. The entire bulk is then spread over screen racks to dry, after which the seeds are then run through a fanning mill to remove the unwanted debris and light seeds. The seeds are now clean, dry and of high purity.

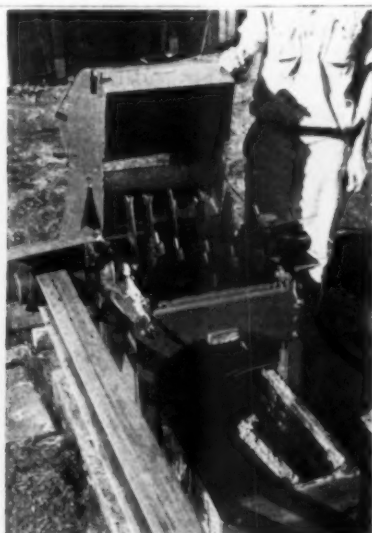
Cleaning seeds by this method is a 2-man job. The amount of seeds that can be cleaned in an 8-hour day varies with the type of seed. In the case of red cedar a charge of about three-quarters of a bushel can be handled at one time. The seeds are allowed to churn in the machine for about fifteen minutes. Allowing five minutes to empty the mill and



Operator charging hammer mill with red cedar berries, with machine in operation and water being directed into machine with hose. Turbulent water flows out below. Seed box is withdrawn but will be inserted under machine at time of discharge of cleaned seeds.



Hammer mill in operation, with operator directing stream of water into machine. Turbulent water is shown pouring out of machine below. When water becomes relatively clear, seeds can be removed. A speed of 350 to 400 r.p.m. is recommended for most seeds.



Hammer mill opened to permit removal of screen and dropping of cleaned seeds into box below. The hammers are solid, not the swinging type, and the box below, as shown, has screen bottom. The box is pulled out from under the machine when in operation.



recharge runs the total time per charge to twenty minutes. Thus the hammer mill will clean around eighteen bushels of red cedar berries per day. In the case of most other fruits, such as cherry, plum or rose, this daily volume can be doubled and even trebled. This is due to the fact that the other fruits become macerated and clean much more quickly than red cedar.

The facilities required for this entire operation are as follows: (1) Hammer mill and screens, (2) water supply and hose, (3) drainage way to get rid of fluid from mill, (4) screened box of a size that can be placed under mill to receive clean seeds when mill is emptied, (5) power unit to turn hammer mill, (6) screen racks for drying, (7) fanning mill to make final cleaning.

#### ADAMS NURSERY MARKS HUNDREDTH ANNIVERSARY.

One of New England's oldest nurseries, Adams Nursery, Inc., Westfield, Mass., founded in the gold rush year, 1849, is celebrating its one-hundredth anniversary this year. Started at Portland, Me., by John W. Adams, who was then 21 years old, the nursery had as its original purpose the furnishing of apple trees for growers who depended almost entirely upon local nurseries for their needs.

Because of the cold climate at Portland, Mr. Adams soon found that his chief problem was to keep the fruit trees from freezing. Winter frosts often destroyed the work of one or two years. Realizing that he must find a warmer climate if his business was to succeed, Mr. Adams moved

the firm to Springfield, Mass., in 1867. He continued to grow fruit trees, but the demand for ornamental plants forced him to branch out. Several greenhouses were built, and large importations of ornamental stock were made each year.

In 1896 Mr. Adams' two sons, Walter and Charles, joined the firm, which was continued under the name of J. W. Adams & Co. Walter Adams became president in 1911 after the death of his father and has continued in that office up to the present time. Charles Adams served as treasurer from 1911 until his death in 1945, when Floyd A. Oatman, a nephew of the third generation, took over his duties.

Others associated with the firm include E. M. Kling, secretary; Lester W. Needham, sales manager, and Albert Vanderbrook, superintendent.

As the firm expanded, more space was needed, and a 40-acre farm at Westfield was bought in 1912. It was not until ten years later, however, that an office was built and the entire business moved to Westfield. Here a larger volume of stock has been grown, with land being added from time to time until the nursery today includes about 200 acres. Located on Route 20, about six miles west of Springfield, Adams Nursery, Inc., now grows chiefly ornamental stock and is known for *Daphne cneorum* and *Viburnum carlesi*.

#### BUILD GARDEN CENTER.

Construction was begun March 7 on a garden center to be operated by the Beverly Greenhouse & Nursery, Fort Wayne, Ind. The center, which will feature plant materials and gar-

den and lawn supplies, will have a frontage of 165 feet on Pigua street and 125 feet on Oakdale drive, Fort Wayne.

An all-glass front on the main building will enable those driving by the center to see the displays inside. At one side of this building, which was designed by Fred Pohlmeier, architect, will be a modern conservatory for displaying house plants and decorative plants. At the opposite side will be a shaded area for displaying nursery stock. A display garden behind the main building will be planted to give customers ideas for their own planting arrangements. Landscaping of a strip of lawn in front of the center and a parking area also have been planned to make the new center attractive to customers.

Beverly Greenhouse & Nursery are owned by A. E. Koenenman, who organized the business twenty years ago as a hobby. A landscape service is maintained in connection with the greenhouse and nursery.

#### BAGWORM CONTROL.

The bagworm has built up to destructive numbers in some sections in the past couple of years. Its presence depends upon the severity of the winter. In communities where nurserymen know bagworms have been numerous, they should check in late spring or early summer to see if the eggs in the bags have survived the cold weather. If so, spraying should be done as soon as the newly hatched bagworms start feeding on the plants. The pest is readily controlled with arsenate of lead if spraying is started as soon as feeding begins, but is difficult to eradicate if the spraying is delayed until the larvae near maturity.

Application of arsenate of lead should be made somewhat stronger than for other leaf-eating insects—four tablespoonfuls of arsenate of lead to one gallon of water, or two pounds to fifty gallons of water. A small quantity of summer spray oil added to the mixture will act as a sticker.

**SPEAKERS** at a recent meeting of the garden department of the Fairbury Women's Club, Fairbury, Neb., were Roy and Charles Hurlburt, proprietors of the Fairbury Nurseries.

**THE** nursery of the late H. A. Bahrens, Trailwood Farms, Wilkes-Barre, Pa., has been purchased by his son-in-law, J. C. Read, 10 West Clenmore boulevard, New Castle, Pa., who is moving most of the smaller stock to New Castle.



Red cedar (*Juniperus virginiana*) seeds, cleaned and uncleaned. The clean seeds, on the left, were processed in the hammer mill, then dried and run through a fanning mill to remove stems and other small debris.



# Troubles with Peach Trees

By M. B. Cummings

The peach is an important tree in the nursery, and the fruit is an important one in the orchard as in the home. The species has been grown for many years; in fact, it is one of the oldest and most delicious of fruits. The peach may be called a world fruit, for it is grown in many countries and has traveled far from its original habitat. The wide range of its culture and its age have subjected it to many enemies, both of tree and fruit; so there are many problems in raising trees in the nursery and in growing the fruit in the orchard. It is the purpose of this article to feature the major insects and diseases so as to assist the grower in maintaining healthy nursery stock and also to help in the maintenance of a good reputation for healthy trees and satisfied customers.

## Some Diseases.

The peach tree has its full quota of disorders, generally known as diseases. Some are due to fungi called parasites, which are small plants living on or within the tissues of leaves or twigs; others are known as viruses, which are probably microscopic organisms of a size not detectable with the compound microscope, but contagious and destructive, easily spread from plant to plant and doing much harm. Affected plants cannot be certified as healthy and suitable for sale. Most diseases of peach trees, whether fungus or virus in nature, are controllable in one way or another, but they call for alertness in detecting them and thoroughness in practical control. These several points will be stressed in this article.

Leaf curl on peach leaves is of rather common occurrence, especially when no control is practiced. The symptoms are thickened curled leaves that are yellowish with reddish tints. The curling begins shortly after the small leaves protrude from the bud; they increase in thickness and become arched, curled, wrinkled and somewhat cartilaginous in consistency. Any part, or all the leaf, may become distorted and curled. Swellings may occur on the twigs, which turn light green or yellow. The red color becomes more conspicuous as the season advances. All leaf functions are disturbed and diminished. At a late stage the leaves turn brown and drop, thus harming the tree and spoiling its normal good looks.

The leaf curl fungus is connected

with weather conditions. Low temperature and wet weather favor the disease, which is more general in regions near bodies of water. High temperatures such as occur in Texas and the southwest are less favorable for the fungus. For practical control, dormant sprays such as lime-sulphur, two gallons in 100 gallons of water, or strong Bordeaux and copper sulphate, put on before the swelling of buds in the spring, are effective in checking the disease. Thus the fungus must be checked before infection can occur in the spring, but late and early winter sprayings are equally effective. Sprays put on after the leaves are out are of little value. Failures to control curl are usually

due to delayed applications, when buds are open too much and infection has occurred from overwintering spores on bud scales.

Yellows of peaches is a long-standing disease which may occur almost any time and almost anywhere unless much care is taken in averting its introduction. It is a virus disease and is manifest by the production of wiry, sickly shoots, a yellowing of the narrow foliage and mottling of and premature ripening of fruits. Sometimes the rolling of the leaves from the margin inward to make them more tubular is one of the first indications of the disease in the nursery and in the orchard. Trees once affected never recover, for yellows is



Legends to diagrams: 1, Injury by bark beetle; 2, tip injury by Oriental peach moth; 3, narrow leaves showing yellows disease; 4, leaf curl disease, wrinkled, thickened, distorted; 5, peach rosette with leaves clustered—later separated; 6, little peach symptoms with fruits small, hard, oblong, and leaf curled and bent, pale yellow; 7, peach aphid, a louse that sucks; 8, brown rot of fruits with decayed area, and spores on little elevations; 9, worm of trunk borer; 10, curved scars made by curculio; 11, one side of Oriental peach moth; 12, worm of peach moth; 13, fruit injury of worm of Oriental moth; 14, one parasite of peach moth; 15, "para" placed around trunk to kill borer; 16, terrapin scale on branch; 17, peach twig borer moth. None done to scale; many much enlarged.

an internal disease and beyond the reach of sprays. Cutting down the trees is the only solution.

Little peach is a virus disease which has received attention for many years. It is characterized by delayed ripening of hard and oblong undersize fruits and by yellowish drooping leaves. It can be recognized in the nursery and should be eliminated there. It ends in the ultimate death of the tree. The flavor of the fruits is inferior, and they are to be discarded in all grades sent to market. Affected peaches are insipid and watery and may be stringy. The pits of little peach are small and generally fail to sprout the embryo within. The little peach disease is contagious and can be transmitted to healthy trees by budding. It is a virus disease affecting internal tissues, but has distinct outward manifestations. Since diseased trees cannot be cured or

treated in any way, immediate removal from the nursery and the orchard is the correct procedure. Cut down the tree, haul it away and burn it.

Peach rosette is characterized by compact tufts of leaves, with several bunched clusters within a few inches of each other. On trees affected by rosette the fruits shrivel and drop. This is a virus disorder, is contagious and needs the same treatment as for little peach. All affected trees should be cut and uprooted without contact with other trees. It is important always to be on the watch for peach rosette and get it out early before it can spread. Near-by infested orchards and nurseries are a menace to healthy ones, just as are diseased trees.

The phony (deceptive symptoms) peach disease is similar in nature to yellows, but different in symptoms. Its signs are larger and darker green

leaves until near defoliation, when they become yellow. The twigs are shorter and a little stubby, being only one-third to one-half the normal length. The heads of trees are compact and below normal in size. The set of fruit is small, with oversize specimens. Peaches mature ten days ahead of time, are insipid and of no value. Trees and twigs are brittle. The leaves are rich green, the bark is smooth and the fruit, although small, is smooth and clear. The disease develops slowly, requiring two seasons for full manifestations. The disorder is easily transmitted in propagation methods. The most susceptible varieties are Elberta, Hiley, Hale, Belle of Georgia and Mayflower. Extermination of affected trees is the only known means of control. Prompt detection and destruction are important. Trials in the past few years confirm

[Continued on page 63.]

## Industrialization in Practice

### PART III

By Charles W. Hetz

Two-row planting has many advantages in the follow-up work. Few farmers would think of single-row operation because tractor cultivating takes twice as long. It is not possible to plant accurately enough to cultivate two rows at a time if planted separately.

Two-row cultivators are standard equipment for general farm purposes. It is well to bear in mind that for nursery practice high clearance is needed. About 4-foot material is the limit for 2-row tractor clearance. The single-row Farmall A.V. will clear a bit higher. However, it must have a careful operator, as it can easily be tipped over especially when narrowed up.

Farmers spend plenty of cash wisely for fertilizer. Nurserymen have a much more valuable crop and one that depletes soil to a greater degree. Standard fertilizer attachments can be found for 2-horse cultivators and for 1 or 2-row tractor cultivators. If consideration is given plants per acre and added quality and grade, it is foolish if this opportunity to improve through fertilizer is overlooked. Fertilizer can be applied by hand, but when applied properly, back of the cultivating tooth, next to the row, thereby putting it down close to the roots, it really pays in a big way.

Long rows are practical if you can get your plant material out. Because of the problem of carrying out balled stock, most evergreens are

planted in small blocks. We have solved this problem by use of a tractor-drawn 2-wheeled trailer built moderately high off the ground. Rows are sometimes a quarter mile

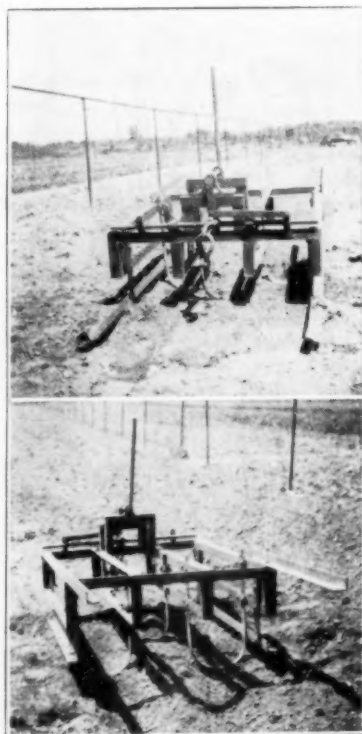
long. Small orders are dug at the ends, while large quantity lots are dug down in the center of the field and loaded on the trailer. The tractor is licensed for road work and can haul the 2-ton load directly to a railroad car or to the packing barn.

This same cart is used in winter to haul manure into the blocks for top-dressing in the winter. Cattle are fed for beef, straw is chopped before bedding and superphosphate is used in the stables. This serves to produce quality stock and also more nearly to maintain fertility, making it possible to replant later without so long a rest period.

When available, a manure spreader built with wide enough wheel bases to follow a tricycle tractor and with a power take-off will prove a time-saver for this operation.

On this page appear pictures of the small 3-row digger used for lifting lining-out stock, mentioned in the first article in this series. This digger is powered by a cable and steered with a lever by the operator who rides it. The cable is run through a pulley block anchored to a truck or tractor at the end of the row and pulled by either a tractor or truck, resulting in faster digging and keeping the roots, thus saving labor and adding quality to the product. Wherever possible, every other three rows are dug with cable power, and the remaining rows are dug-powered by a Farmall A.V. tractor.

[To be continued.]



Top: 3-row Digger for Lining-out Stock, Front View.  
Bottom: Back View.

# Nursery Winners at Flower Shows

## INTERNATIONAL SHOW AT NEW YORK CITY.

Opening on the first full day of spring, the thirty-third annual International flower show, held March 21 to 26 at the Grand Central Palace, New York city, drew large crowds to view its more than 400 competitive exhibits. The fifteen main floor gardens attracted spectators not only for their beauty but for their ideas on design and plant selection.

In the displays of Don Roehrs, Franklin Lakes, N. J., and the Brookside Nurseries, Darien, Conn., the return to naturalistic pool gardens, which characterized the garden exhibits, was shown. Mr. Roehrs won a gold medal certificate and the Massachusetts Horticultural Society's gold medal for his rock garden and also placed first in the penthouse planting classification.

For a simple formal garden featuring foxgloves and hollyhocks, plants which have been shown rarely, if ever before, at a March flower show, the estate of H. M. Twombly, Convent Station, N. J., won a gold medal and the special trophy of the Horticultural Society of New York. The early bloom was achieved by planting the seeds last July and moving the plants into the greenhouses in December.

Brilliant massed *Azalea pontica* and mollis hybrids were shown against a background of mountain laurel in a formal azalea garden with a pool displayed by Bobbink & Atkins, East Rutherford, N. J. This garden won first prize in the class for gardens of azaleas and received the special trophy of the Federated Garden Clubs of New York State. Dauernheim, Inc., Wantagh, Long Island, N. Y., won second place for an azalea garden with a pool and fountain.

First place and the special trophy of the New York Florists' Club went to Bobbink & Atkins for their garden of seasonal material, covering 1,000 square feet. An English shelter and rose arbor were featured in the informal spring garden of Daybreak Nurseries, Westport, Conn., which won second place in this class. Peter Henderson & Co., New York city, won third prize for a display of a portion of a house with a floor-length picture window and a terrace that terminated in a grass panel edged with trim, brick-lined borders of various spring flowers.

For a cottage garden, featuring

tulips, Donald A. MacDonald, Locust Valley, N. Y., was awarded the special trophy of the Grand Central Palace and first prize among the gardens of seasonal material, covering 375 square feet. The formal pool garden of Daybreak Nurseries placed second.

In the exhibit of Turner Bros. Nursery, West Long Branch, N. J., a modernistic shelter was reached by a flagstone ramp which divided the garden into two levels. The bronzed foliage of full-grown Japanese maples contrasted with a specimen *Cedrus atlantica glauca*, and peonies, sweet williams and *hemerocallis* were among the border flowers. This display won first place among the gardens of seasonal material, 600 feet square, and was awarded the special trophy of the International flower show. Brookside Nurseries, Darien, Conn., were second, and W. Atlee Burpee Co., Philadelphia, Pa., third.

Using a mountain stream, waterfall, bridge, pool and a large yellow vase, Effingham Pinto, Plainfield, N. J., created a dramatic effect in an unusual exhibit which won first prize among the pool gardens and was awarded the special trophy of the flower show. Matinecock Greenhouses, Oyster Bay, N. Y., won second prize in this class with a pool garden dominated by a weeping dogwood and combining *arbutus*, trilliums and various ferns with azaleas, rhododendrons and *leucothoe*.

Designed to give garden information to the public in a palatable form, the exhibit of the Brooklyn Botanic Garden showed more than 100 naturally dwarf plants, chiefly evergreens, which could be used in the New York area. Individual specimens were labeled, and the display, which won a gold medal, included a garden using many of these plants. The exhibit of the New York Botanical Garden, called "Plants by the Sea," presented in a natural setting plant material which would do well under seaside conditions. Authenticity was added by a splashing surf under a small boat landing.

## PHILADELPHIA SHOW.

A series of formal pools, each bordered with rows of close-planted tulips, formed the central axis at the twenty-second annual Philadelphia flower show, held March 20 to 26 at the Commercial Museum, Philadelphia, Pa. Continuous borders of tulips, evergreens and flowering trees and shrubs bounded the wide thoroughfares on both sides of the pools. One hundred yards in length, this central axis, staged by the flower show management, featured choice specimens of American holly.

A woodland waterfall surrounded by a variety of native woody and herbaceous plants in a natural habitat brought the governor's trophy for the most original professional display



Bobbink & Atkins Garden Which Won First Prize and Trophy at New York Show.





Garden by Daybreak Nurseries, Westport, Conn., Won Second Prize at New York Show.

to Vick's Wildgardens, Glen Moore. After considering both commercial and amateur entries for exceptional cultural achievement, the judges presented the T. A. Weston memorial award to V. A. Lea, Chestnut Hill, for an outstanding display of ranunculi.

An April garden, with hyacinths dominating, and a May garden, featuring formal beds of well forced tulips, formed a 2-section formal spring garden which won a first prize for Henry F. Michell Co., Philadelphia. Another first place winner was the garden retreat displayed by Styer's Nurseries, Concordville. A simple and dignified arrangement of azaleas, rhododendrons and *Viburnum carlesi* was used in developing this attractive, secluded garden nook.

Planted against a background of evergreens, commercial forcing varieties of pink, blue and white hydrangeas in semiformal beds won a first prize for A. M. Campbell & Son, Strafford. The firm won another first prize for a green and white garden, featuring specimen plants of *Gardenia veitchi* against a background of evergreens.

Handsome specimens of azaleas, flowering dogwoods and flowering crab apples enclosed the outdoor lounge garden by John Albrecht Nurseries, Narberth, which received first prize in its class. Tulips and narcissi added touches of color to the garden. For an informal garden which utilized a variety of broad-leaved evergreens, Upper Bank Nurs-

eries, Inc., Media, was awarded a blue ribbon.

Using an authentic old New England mill and water wheel to add atmosphere to his New England mill-stream and rock garden display, Alexander Heimlich, Woburn, Mass., included dense plantings of native materials which gradually gave way to some choice and more colorful naturalized gardens plants at the far end of the deep mill pool. Although this exhibit was not entered in the competition, the judges gave it a special award.

Two first prizes were presented to C. S. Swayne, Springfield, for his large-scale gardens. One was an outdoor living room, with a fireplace, terrace and modern metal summerhouse, livened with colorful plantings of various spring-blooming bulb crops. Calling for the use of a wide variety of herbaceous plants, the other was an informal rock or ledge garden.

A blue ribbon was awarded to Bobbink & Atkins, East Rutherford, N. J., for two large beds of massed azaleas, arranged for effect, which greeted spectators as they entered the main hall of the museum. Vosters Nurseries, Secane, Pa., also received a first prize for a display of philodendrons.

With the aid of three commercial nurseries, the Philadelphia Rose Society presented three model rose gardens, each inexpensive enough to fit the pocketbooks of many home gardeners. The cooperating firms, Conard-Pyle Co., West Grove; Hen-

ry A. Dreer, Inc., Philadelphia, and Bobbink & Atkins, received special awards.

A spring garden, developed around a stream and pool setting, was staged by the Philadelphia branch of the National Association of Gardeners. Masses of azaleas, rhododendrons, tulips, primroses, daffodils and daphnes provided brilliant coloring against an evergreen background.

#### NEW ENGLAND SHOW.

Thousands of Bostonians left the cold, snowy outdoors in favor of the pleasant, tropical atmosphere provided by palm trees, orchid displays and masses of acacias at the seventy-eighth annual New England spring flower show, held March 13 to 19 at the Mechanics building, Boston, Mass.

More than 100,000 spectators viewed the many exhibits. One naturalistic garden featured murmuring brooks spilling down a rocky course to placid pools below. Individual specimens and clumps of flowering plants were placed beneath flowering dogwood, mountain laurel and birches. Depicting an early summer scene was a garden of carefully cultured roses with bright-colored clematis trailing over a pergola. A well designed garden of brilliant, hardy chrysanthemums won a gold medal for its striking picture of fall garden beauty.

Among the other gardens to win gold medals were those of tulips, hyacinths and narcissi, with paths of green grass, displayed by Joseph Breck & Sons, Boston, and the Bay State Nurseries, Inc., North Abington. The gold medal of the Horticultural Society of New York for the most beautiful exhibit went to Harlan P. Kelsey, Inc., East Boxford, for an informal garden.

The George Holliday memorial prize, donated by Mr. and Mrs. Robert Stone, was awarded to George Finnie, Dublin, N. H., for an exhibit of potted cinerarias. Edwin S. Webster, Chester Hill, Mass., won the Antoine Leuthy prize for the best display of flowering plants in the show with an exhibit of orchids. His orchid display also won the gold medal given each year by the Pennsylvania Horticultural Society for the exhibit showing the highest standard of culture. The president's cup offered by John S. Ames for the most meritorious exhibit, one of the most coveted trophies of the Boston flower show, was awarded to Mr. and Mrs. Robert Stone for a display of acacias.



Gold medals were presented to Albert A. Hulley, Middleboro, for a rose garden; Butterworth Florist, Framingham, for cymbidiums; Bartlett Gardens, Hamilton, for a formal garden; Weston Nurseries, Inc., Weston, and Harlan P. Kelsey, Inc., for informal gardens; Alexander Heimlich, Woburn, for a ledge garden; Joseph Breck & Sons, for a spring garden; Bay State Nurseries, Inc., for a garden picturing spring and fall; William T. Walke & Sons, Salem, for amaryllises, and Garden-in-the-Woods, South Sudbury, for plants.

Among the silver medal winners were Sherman Eddy, of Towpath Gardens, West Hartford, Conn., lighthouse keeper's garden; Cherry Hill Nurseries, West Newbury, Mass., informal garden; F. I. Carter & Sons, Tewksbury, desert garden of cacti and succulents; Francis W. Hunnewell, Wellesley, *Coelogyne cristata*, and Brightbridge Greenhouses, East Providence, R. I., garden of climbing and hybrid tea roses.

For the world's smallest roses the Conard-Pyle Co., West Grove, Pa., received a bronze medal. Special prizes were awarded to Garden-in-the-Woods for a naturalistic spring garden and flowering and foliage plants; Butterworth Florist for cymbidiums; Thomas Murray, Framingham Center, Mass., for *Strelitzia reginae*, and Joseph Breck & Sons for hybrid blueberries.

A realistic jungle landscape by the Massachusetts Horticultural Society was awarded the Buckley medal of the Garden Club of America. For the second consecutive year the Massachusetts department of agriculture trophy for the best exhibit staged by a commercial grower in Massachusetts was won by Bay State Nurseries, Inc.

#### CLEVELAND FLOWER SHOW.

At the annual Cleveland home and flower show, held March 5 to 12 at the Public Auditorium, Cleveland, O., a new floor plan was used, and interior settings were interspersed among the garden and outdoor exhibits to demonstrate uses of flowers in the home.

Drawing a record attendance, this year's show featured a woodland scene displayed on the auditorium stage by the Greater Cleveland Flower Growers. A 30-foot waterfall flowed into a stream which meandered through dogwoods, flowering peaches and shrubs of rustic beauty.

Three model homes were land-

scaped with an informal arrangement of broad-leaved evergreens, flowering shrubs and other plants by the Lake County Nurserymen's Association. White lilacs in full bloom accentuated the corners of the homes, and color was added by flowering peach, cherry and almond trees and azaleas, including varieties *kaempferi*, *mollis* and *schlippenbachii* and Gable hybrids. For the foundation plantings *Juniperus horizontalis plumosa* was used extensively, with *kalmias*, *leucothoes*, *rhododendrons*, *ilex*, *Taxus cuspidata*, *T. browni* and *T. hicksii* placed in important locations. *Pachysandra terminalis* and *Iberis sempervirens* formed the edgings, and bleeding hearts, white lilies and pansies, all in full bloom, were placed near the entrance of the ranch-style home. Bright-colored tulips and daffodils contributed an atmosphere of spring to the plantings.

First prize in the competitive garden displays was won by Fred Schneider & Sons Co., Rocky River, for a garden featuring an old-fashioned flower border designed around a rustic arbor. Hirt's Strongville Greenhouse, Strongville, was awarded second prize for a desert garden. A lawn, pool and flowered rock wall setting won third prize for C. Merkle & Sons Co., Mentor, and the gardens entered by Kurt O. Laubinger & Sons, Inc., Macedonia, and the Naumann Plant Co., South Euclid, received honorable mention.

#### MICHIGAN FLOWER SHOW.

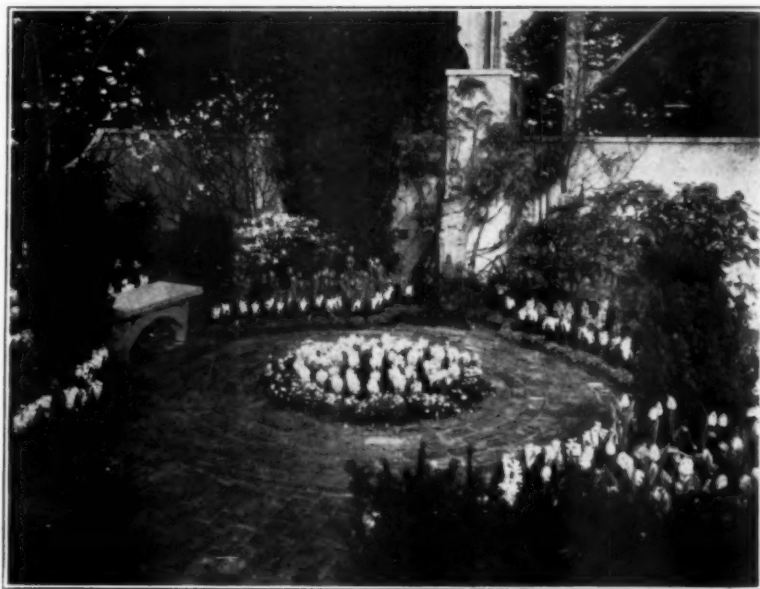
The twentieth annual Michigan flower and garden show, held March

26 to April 3 at Convention Hall, Detroit, broke all previous Detroit flower show records for attendance and for display advertising.

Among the gardens entered by nurseries was a display of flowering plants and shrubs surrounding a fountain, which was exhibited by Pontiac Nurseries, Romeo. The Greening Nursery Co., Monroe, displayed a garden with a modern outdoor fireplace encircled by birch trees. A stream, rising from a miniature waterfall, flowed through the garden, and flowering dogwoods formed the border.

The Chrysler Corp. presented a garden covering 36,000 square feet of floor space in Convention Hall. The exhibit featured scenes representing various sections of the United States. Included were a Michigan north woods stream, winding between evergreens and wild flowers; a Florida beach scene with date palms, silver bamboo trees, Chinese hibiscus and other trees and plants, and an Arizona dude ranch with a desert background, featuring Italian cypress trees, Russian olive trees, giant cacti and prickly pear trees.

Other scenes represented in the display were a village with an old cathedral setting, brightened with red azaleas, hibiscus, bedding begonias and other plants; an Iowa farm scene with live chickens and other stock, including plantings of Lombardy poplars, Golden Willow redbuds and white lilacs; an Oregon woods scene with Black Hills spruces, Oregon grapes, Mugho pines, white birches, red and white roses and ostrich ferns; a Maine fishing scene with fishing



Garden by Bay State Nurseries, Inc., Given Special Award at New England Show.

shacks and a sailboat in a small pool, planted with spruces, birches, weeping willows, flowering quince, Scotch heather and beach plum trees; a large California house with a fountain and a court, using rubber trees, fig trees, date palms, camellias, hibiscus, red geraniums and mixed tropical ferns, and a scene representing old Quebec, with a painted backdrop showing the approach to the city from the St. Lawrence river and featuring Black Hills spruces, white birches, Golden Willow redbuds and red-leaved barberry.

#### GREATER ST. LOUIS SHOW.

Carrying out the theme "A City of Flowers," both amateur and professional exhibitors at the Greater St. Louis flower and garden show, held March 13 to 20 at Kiel Auditorium, St. Louis Mo., emphasized practical gardens in their displays.

Among the larger gardens was an elaborate formal rose garden exhibited by the Greater St. Louis Landscape and Nurserymen's Association. Covering 2,000 square feet, this display included masses of rosebushes arranged in geometrical designs and climbing roses covering a crosswalk in the garden. Junipers, hemlocks, taxus and boxwoods bordered the garden, and, in one corner of it, twenty of the newer varieties of patented roses from Jackson & Perkins Co., Newark, N. Y., were displayed.

Another large garden was a green and white, semiformal outdoor living room, presented by the Greater St. Louis Association of Gardeners. This featured a hedge of Pfitzer junipers surrounding the garden, which was an elevated flagstone patio with a background of American holly. Yews and white azaleas were banked against this terrace, and white hyacinths and tulips were massed along the sides of a serpentine walk leading to the patio.

Depicting a typical development for a city back yard, the garden displayed by Old Orchard Gardens, Webster Groves, Mo., won first prize in its class. A peg-type rail fence enclosed the garden. Azaleas were massed in the foreground, and the focal point of a brick patio was a pool with a fountain and birdbath. Color was added by narcissi and red and white tulips.

Narrow walks bordered by boxwood hedges and beds of tulips and hyacinths were features of the bulb garden, covering 800 square feet, exhibited by the Missouri Botanical Garden, Gray Summit. At the end of the garden were a small pool and an ornamental bench, and behind this

was a background of colorful climbing roses.

Using two separate plots, each twenty-five feet square, Pring Bros., St. Louis landscape and nursery firm, showed a "before and after garden." The "before" back yard was a dismal picture, while the "after" was brightened with a terrace, a play area for children and a well camouflaged ash pit and work area. Westover Nursery Co., University City, displayed a garden of bedding plants, covering 600 square feet.

First prize winners in the rose classification were Woodlawn Gardens and the Home Nursery & Greenhouses, Edwardsville, Ill.

#### SOUTHERN CALIFORNIA FLOWER SHOW.

Despite rainy weather, record crowds attended the southern California spring flower show March 10 to 13 at the Fannie E. Morrison Horticultural Center, in Brookside park, Pasadena, bringing the total gate to an estimated 25,000 for the 4-day

show. The theme of the event, "Garden Wonderland," was carried out in the main building and patio in formal English garden arrangements designed by landscape architects.

Occupying four large buildings, with landscape and garden club exhibits arranged outdoors on the sloping grounds of the five and one-half acres of surrounding terrain, the eleventh annual show had an ideal natural setting. A special feature was a garden consultation booth in the center of the patio, where garden club members and horticulturists were present to answer questions and advise on cultivation.

In the main building the beauty and elegance of eleven formal English garden exhibits, complete with clipped hedges, topiary designs and Gothic archways and banked with masses of cut flowers and flowering plants, greeted the spectators.

Winner of the gold medal, the highest award presented this year, and a center of attraction at the show was a display of orchids under Gothic arches, entered by Fred A. Stew-



Top: Bulb Garden Staged by Missouri Botanical Garden at Greater St. Louis Show. Bottom: Garden by Students of the University of Missouri School of Landscape Design.

art, San Gabriel, and Joseph W. Urmston, San Marino. Several hundred large, cerise cattleyas predominated, with clusters of white cattleyas in the background.

Flowering plum and peach branches and a formal design of azaleas and maidenhair ferns made up the large exhibit of Coolidge Rare Plant Gardens, Ltd., East Pasadena, which attracted much attention. An unusual arrangement of low, circular urns, placed on graded levels in two parallel lines, to carry water to the pool below, and amusing, metal pouter pigeons placed here and there added unique touches to the display.

A colorful exhibit of cinerarias among hedges and topiary designs was entered by Howard & Smith, Montebello, and a combined garden exhibit was presented by Marshall's Nursery & Flower Shop, Sierra Madre, and Miller Water Gardens, San Gabriel.

For the beauty of design and choice of material in a landscape setting built around a garden gate and featuring flowering peach trees in the background, with pansies bordering a formal garden walk, Tuttle Bros. Nurseries, Altadena, were awarded the silver medal. Ozella Orchids, Hawthorne, won the bronze medal for the quality of the material in a beautiful display of orchids.

In the main building there were also displays by Berry's Azalea Garden; C. Jacques Hahn, Sierra Madre, and the Los Angeles Country Club.

Camellia exhibits in the secondary building of the show were staged by Nuccio's Nurseries, Altadena; Marshall's Camellia Nursery, and Mark Anthony Camellia Garden, San Gabriel; Shepp's Shade Garden, East Pasadena; McCaskill Gardens and Coolidge Rare Plant Gardens, Ltd., Pasadena, and Marshall's Nursery & Flower Shop. The display of the Clarence S. Hearn Nursery, Arcadia, featured a flowering Chinese magnolia in the background with camellias in the foreground.

In the outdoor patio, Peter Valinga, Burlingame bulb grower, had an effective display of Dutch hyacinths in all colors, arranged as a formal garden.

#### FIRST CALIFORNIA INTERNATIONAL SHOW.

Crowds of more than 152,000 persons flocked to the first annual California international flower show at the clubhouse of Hollywood park race track, Inglewood, Calif., from March 26 to April 3. The show was acclaimed a great success, and at-



Exhibit of Coolidge Rare Plant Gardens, Ltd., at Southern California Show.

tendance was well over the 105,000 persons needed to underwrite the event.

Sponsored by the Southern California Horticultural Institute, Inc., in cooperation with the Southern California Floral Association, the show covered three and one-half acres of space, all indoors. Although there were not so many foreign exhibits as had been expected, southern California growers and nurserymen compensated for the lack with lavish garden displays of rare California plants, as well as importations from Hawaii and other countries.

The Germain Seed & Plant Co., Los Angeles, won a \$1,000 first prize for a garden of spring-flowering bulbs, covering approximately 1,200 square feet. Exhibited against a background of a specially constructed California house, complete with trellises, garden walls and a garage, this garden, the largest in the show, featured Golden Age, White Giant, Scarlet Beauty and Krelage's Triumph tulips. A bed of English primroses and one of Dutch hyacinths brightened the exhibit, while dwarf cinerarias provided the front border. Flowering camellia bushes and blossoming fruit trees formed a background.

A waterfall coursing down a California hillside highlighted the exhibit of cymbidium orchids presented by Evans & Reeves Nurseries, Brentwood. Against a background of flowering camellia bushes, Moore's Nurseries, Inglewood, exhibited a large garden featuring yellow daffodils.

Among the attractive azalea gardens was that of Coolidge Rare Plant Gardens, Ltd., East Pasadena, which consisted entirely of azaleas, with

some bushes from seven to ten feet in diameter.

Roy F. Wilcox & Co., Montebello, general chairman of the show, entered five large garden exhibits, while Keeline-Wilcox Nurseries, Montebello, exhibited two identical border gardens, each 250 square feet in size. Among the exhibits of Roy F. Wilcox & Co. was an azalea display landscaped as a garden. Another included tropical decorative foliage, grown in southern California and consisting of caladiums, dracaenas, flowering hydrangeas and Easter lilies. A third Wilcox garden was made up entirely of decorative foliage and used *Philodendron pertusum* and *hastatum*, variegated crotons, *dieffenbachias*, *cibotium* ferns and *Ficus pandurata*. A sculptured figure of a mother and child by Bernard Rosenthal was the center of another exhibit of tropical foliage contributed by the firm.

A novel use of garden furniture was shown in the display of Rosedale's Monrovia Nurseries, Monrovia, which covered about 400 square feet. Flowering camellias and azaleas were used in the setting. Building its garden scene around a pool, with trees in the background, Toluca Lake Nursery, Burbank, featured spring flowers and camellia bushes in its exhibit.

Howard & Smith, Montebello, displayed flowering Pink Rosette rosebushes with a garden wall and bench and with *clivias* and fruit blossoms in the background. Azaleas and tropical foliage predominated in a garden patio, with attractively set garden furniture, which was displayed by Winsel-Gibbs Seed & Nursery Co.,



Los Angeles. Featuring models of home gardeners in action, the large exhibit of Superior Nursery, Los Angeles, showed a mother and son in the act of setting out plants and included large wall boxes of decorative foliage.

A well landscaped garden corner with a wall in the background, using camellias and azaleas with tulips in the foreground, was displayed by Armstrong Nurseries, Ontario.

#### BERKELEY CAMELLIA SHOW.

At the annual show of the Northern California Camellia Society, held March 19 and 20 at the Twentieth Century Club, Berkeley, Toichi Domoto, Hayward, received the highest award of merit for a noncompetitive exhibitor. He designed a separate room as an outdoor garden of blooming camellia plants, landscaped with evergreens and walks. In addition, Mr. Domoto had an individual flower exhibit and presented each lady at the show with a camellia corsage, distributing an estimated 25,000 corsages during the 2-day event.

Other nurseries that had exhibits included Berkeley Horticultural Nursery, Berkeley; Uliana's Nursery, Oakland; McDonnell Nursery, Oakland; East Bay Nursery, Berkeley; James Rare Plant Nursery, Campbell; Smyth Camellia Nursery, Ross; Orchard Nursery & Supply, Lafayette, and Camellia Hill Nursery, Sacramento.

#### COLORADO FIRM CLOSES.

Business operations at the Rockmont Nursery, Boulder, Colo., have been discontinued, Philip Andrews, owner, has announced, and all remaining stock is being sold. Founded in 1893 by the late D. M. Andrews, the firm has grown Rocky mountain native plants, hybrid lilacs and other nursery materials for more than half a century.

Mr. Andrews is now employed as a geologist by the General Petroleum Corp., the western subsidiary of Socony-Vacuum Oil Co., Inc. His geological work has taken him to Venezuela, Colombia, Peru, Ecuador, Brazil, Mexico and Trinidad during the past twenty-five years. Before returning to the United States in 1946 with his wife and three daughters, Mr. Andrews was chief geologist for Socony-Vacuum Oil Co., Inc., in Colombia.

THE new name of Seaside Gardens, Ocean View, Del., is now Kauffman Farms.

#### WALTER B. CLARKE.

At the age of 72, Walter Bosworth Clarke, eminent California nurseryman and senior partner of W. B. Clarke & Co., San Jose, is still active in his projects of plant importation and introduction. He has many exceptional originations to his credit, including the first seedling lilac ever to be patented. He has received the medal of the Massachusetts Horticultural Society for his achievements in introducing better woody ornamentals into the United States and the Jackson Dawson memorial medal for his work in introducing new and rare plants.

When Walter B. Clarke was born, August 8, 1876, at Rochester, N. Y.,



W. B. Clarke.

that city was the nursery shipping center of the country. While attending high school, Mr. Clarke worked as a shipping clerk for Brown Bros. Co., Rochester, and, after graduation, was with that firm for three years.

In 1896 he enrolled at the University of Rochester and worked part of the day in the offices of the Allen Nursery Co. When the firm opened a branch office at Chicago in 1899, Mr. Clarke left the university to become manager of the branch.

Two years later he started in business for himself at Kalamazoo, Mich., under the name of the American Nursery Co. The firm was successful for four years, until a killing winter freeze destroyed most of the growing stock. About 1905 Mr. Clarke married and decided to go to California to make a fresh start in business. He entered the employ of the California Nursery Co., Niles, and remained there for eleven years, except for a few months in 1909 which he spent working for Luther Burbank at Santa Rosa. During these months he at-

tempted to organize Mr. Burbank's plant-breeding work and records.

In 1916 he became sales manager for the Cottage Gardens Co., Eureka, founded two years before by Charles W. Ward. Specializing in plants suitable for the foggy coastal climate of Eureka, the firm grew heathers, azaleas, rhododendrons and boxwoods. A branch nursery was soon established at San Jose, and Mr. Clarke was partly responsible for choosing the location, which is now the site of W. B. Clarke & Co.

Deciding to go into business for himself in 1921, Mr. Clarke became a horticultural broker. At the same time he was associated briefly with the late J. B. Pilkington in purchasing the San Jose branch of the Cottage Gardens Co., which the two men operated chiefly as a wholesale nursery. Soon afterward he bought out his partner and continued both the nursery and the brokerage business.

Mr. Clarke's son, James, joined him as a partner in 1925, and eight years later Walter C. Borchers, who had become a close friend of Mr. Clarke's after meeting him on a pack trip in the high Sierras, also joined the partnership, called W. B. Clarke & Co.

Shortly after the partnership was formed, Mr. Clarke began a program of importing new plants in an attempt to prove that the California climate was suited to a much wider range of plant material than was being used and that there were many good woody plants growing in other parts of the world which needed only to be introduced to become popular. This project was accelerated greatly by Mr. Clarke's trip to Europe in 1938. He also launched a plant-breeding program, covering flowering apricot trees, flowering peach trees, quinces and lilacs. Although he has always specialized in general woody ornamentals, including conifers, broad-leaved evergreens and deciduous trees and shrubs, he has stressed special groups, such as flowering fruit trees, roses, lilacs and rare members of these groups. A list of his originations and introductions appeared with a lengthy biographical sketch in the January issue of the Journal of the California Horticultural Society.

Mr. Clarke is a past president of the California Association of Nurserymen, and his firm also holds membership in the American Association of Nurserymen. He is a member of the Commercial Club of San Jose and the Elks' Club.

Mr. Clarke has one son, James, his partner and president of the Central California Nurserymen's Association, and three daughters, Bonita, Rosemary and Peggy.



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# Plant Notes Here and There

By C. W. Wood

I have spent much time during the past few years observing and inquiring into the uses of columbines in gardens and have concluded that many nurserymen are missing sales because of their attitude toward these plants. For instance, the reaction of experienced gardeners to white columbines indicates to me that plant growers are missing an opportunity by not making more use of these plants in their show gardens and by making only halfhearted efforts in the merchandising of them. Gardeners are coming more and more to the use of color schemes (whether advisedly or not, I do not attempt to say), and many of their schemes call for the ameliorating influence of white. No plant of its season is better fitted to that role than the columbine, because of the airy grace of its flowers and foliage.

The mention of white columbines always brings to my mind the favorite of other days, *Munsted White*, which is a selection of *Aquilegia vulgaris*, the common species of Europe, introduced by the late Gertrude Jekyll. It is still a good landscape plant, especially when used in masses in the border, along woodland paths and in other lightly shaded spots. The short spurs of this plant cannot compare in grace with the long-spurred hybrids, but it is of more stable character, and this often has a great influence on gardeners. It is usually listed in seed catalogs as *A. vulgaris grandiflora alba*.

Japan has given us a good white columbine in *A. flabellata nana alba*, effective not only in a rock garden, but also in a forward position in a border. If you have grown Siberian and Japanese columbines, you will not be surprised to know that this one is long-lasting for a columbine and grows easily in well drained soil in sun or part shade. It is even more squat than the better known type, *A. flabellata*, seldom exceeding four inches in height, with shallow, white flowers over blue-gray foliage. All forms of *flabellata* of which I know are valuable also because of their early flowering, which adds two weeks or more to the columbine season.

Several of the blue and white species have produced pure white flowers. None of the species equals *A. coerulea albiflora* in all-around beauty. This has all the charm and grace of the type, which is the Rocky

mountain columbine of gardens, and has long spurs and an airy habit of growth in general. It is, however, as tricky as the type. Columbines of the Rocky mountain type are not long-lived in the east, seldom lasting more than two or three years in my garden in northern Michigan and not that long if they are not given a slightly acid, light soil containing a fair amount of humus. Most gardeners know of the plant's fleeting existence, but cannot resist the beauty of all its forms even in the face of that knowledge.

Fortunately, all columbines are easily grown from seeds, though it is not always possible to predict what a seed will bring forth.

A discussion of white columbines naturally leads to a few words on columbines in general, especially on

ideas for their sale. I visited a nursery three or four years ago where hundreds of columbine plants were being rooted out "to make room for something that sells," according to the owner. A few hours later I saw a private garden which he or one of his competitors had modeled the preceding spring, and in it was a shrubbery border with space for most of the columbines he was throwing away. This made me wonder, as I am still wondering, why columbines are not stressed more by the neighborhood nurseryman and why they



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Honeysuckle, Zabeli, 18 to 24 ins.	20.00	150.00			
Honeysuckle, Zabeli, 2 to 3 ft.	30.00	250.00			
Hydrangea A. G., 12 to 18 ins.	25.00				
Hydrangea A. G., 18 to 24 ins.	40.00				
Hydrangea P. G., 2 to 3 ft.	50.00				
Hydrangea P. G., 3 to 4 ft.	60.00				
Lilac, French, 12 to 18 ins.	25.00				
Edward Harding					
Chas. X					
Marie Le Graye					
Pres. Poincare					
Philadelphus Pyramidalis, 12 to 18 ins.	15.00	125.00			
Philadelphus Pyramidalis, 18 to 24 ins.	20.00	150.00			
Philadelphus Pyramidalis, 2 to 3 ft.	25.00	200.00			
Philadelphus Pyramidalis, 3 to 4 ft.	30.00	250.00			
Philadelphus Pyramidalis, 4 to 5 ft.	35.00				
Philadelphus Virginialis, 12 to 18 ins.	25.00	200.00			
Privet, Amur River North, 12 to 18 ins., 3 br. up	7.00	60.00			
Privet, Amur River North, 18 to 24 ins., 3 br. up	9.00	80.00			
Privet, Amur River North, 2 to 3 ft., 4 br. up	12.00	100.00			
Privet, California, 18 to 24 ins., 3 br. up	8.00	60.00			
Privet, California, 2 to 3 ft., 4 br. up	10.00	75.00			

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Magnolia Soulangeana, 2 to 3 ft.	110.00	1000.00
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Cornus Alba Sibirica, 6 to 12 ins.	45.00	
Cornus Amomum, 6 to 12 ins.	40.00	
Cornus Amomum, 12 to 18 ins.	50.00	
Cornus Florida, 12 to 18 ins.	50.00	
Cornus Florida, 18 to 24 ins.	60.00	
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Forsythia Spectabilis, 18 to 24 ins.	45.00	
Hydrangea P. G., 1-yr., No. 1, rooted cuttings	60.00	
Lilac, Persian, 12 to 18 ins.	100.00	
Viburnum Opulus Sterile, 1-yr., rooted cuttings	60.00	
Weigela Eva Rathke, 6 to 12 ins.	100.00	
Weigela Eva Rathke, 18 to 24 ins.	150.00	

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American Red Pine, 2-yr., 2 to 5 ins. ....	\$4.00	\$30.00
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<i>Taxus cuspidata</i> , 2-yr. T, 6 to 10 ins. ....	\$22.50	\$180.00
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These *Taxus* liners are strong 2-year stock grown in rows and tractor-cultivated.

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<i>Castanea mollissima</i> , sdgs., 12 to 18 ins. ....	20.00	170.00

We have a surplus of *Ampelopsis quinquefolia*, 3-year. These are excellent for bank retainers. May we quote your needs?

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are not more often seen correctly used.

In my opinion, columbines, whether they be the staid *A. vulgaris* or the ephemeral *A. coerulea* and its derivatives, are plants to be used in large quantities. If this is correct, no wonder gardeners are so seldom enthusiastic about one or two plants. I used to visit a certain garden every year just to see the display of columbines, largely self-reproducing after the initial planting, in a long shrubby border in which there were literally thousands of plants. And when I visit other gardens where practically nothing has been made of a similar situation, my opinion, formed years ago, that the difference between a good gardener and a poor one lies in the uses he makes of odd places, is confirmed. Another opinion, that nurserymen are missing sales when they fail to set forth columbines to best advantage in their show grounds, is also confirmed.

It matters little where columbines are used, but they should be planted in large numbers. They are ideal for undercovers in open woods or in the home orchard. In the smaller gardens they perhaps grow best in shrubby borders, where they have some shade, but they do well in full sun, too. Years ago I had a 20x20-foot area on a southern slope that was carpeted with self-sown seedlings for a long time. It would probably be there still if quack grass had not overrun the place. As I recall it now, it sold more columbines than any plan I ever tried. If you will look around your show grounds, you may find several places where these plants will fit into plantings which might suggest to your customers similar uses in their own gardens. You may be sure that you will not think of half the uses to which these plants can be put.

Columbines are one of the best plants to use with irises since they help to make the irises real landscape plants instead of the 11-month dull spot they so often are. I have also seen columbines used with gladioli to good advantage. Although I like gladioli, I believe that they make a poor landscape ornament and that it is only by combining them with columbines, thalictrums, heucheras and other graceful subjects that they can be fitted into a garden picture with any degree of grace.

### The Monkey Flowers.

A Colorado reader of this column has asked for information on two or three of the better monkey flowers. Although I have grown several kinds, my experience has not been sufficiently extensive to enable me to point out the best of these plants; so



I shall select three natives which I think will suffice.

One reason I have never grown these plants extensively is that they are not for gardeners like myself who have to contend with a dry, usually sun-parched garden. In fact, all the worth-while kinds that I ever grew were grown either in pots or frames where moisture conditions were under control. On the other hand, if one has a spot that is always moist or has customers with such areas, few plants are more satisfying than monkey flowers. Satisfaction comes first from their long blooming period, which often lasts throughout the entire summer; sometimes from the pleasing fragrance of the foliage, as in the musk plant, *Mimulus moschatus*, and nearly always from the showy flowers.

I can say little of *M. luteus* as a garden plant, because the stock available in commercial channels is too tender for this northern climate. There is surely no reason for this, however, since stock from the northern end of its range in Alaska should be hardy in any of the states. *M. luteus* grows two to three feet high, if given proper treatment, which includes a rich soil and an abundance of moisture. It has large, yellow monkey flowers in the type or flowers of various colors and combinations in the numerous named varieties. The type, long in gardens as an outdoor flower in the south and in conservatories in the north, is too well known to need extensive comment, but its natural variety *alpinus* seems to be unknown to most gardeners and, being much harder than any strain of the type of which I know, is of more use to us in the northern states.

*M. alpinus* serves an entirely different purpose, of course, being only five or six inches tall, and its bright yellow flowers are without the dark spots of the type. It is an excellent rock garden plant if it is given a soil that is not too rich, sunshine and an abundance of moisture. Under these conditions, it has seldom reached more than four inches in height here in northern Michigan and has produced many flowers instead of the overabundance of foliage that appears when it is grown in an overrich soil.

Under the same conditions, *M. lewisii* will reach a foot in height, with somewhat tufted leaves and an abundance of rosy-pink or rosy-red flowers in July. The color, whether rosy-red or rosy-pink, is unusual in this type of flower and should make the plant interesting to most gardeners who can supply its moisture needs.

*M. primuloides* is a western Amer-

## LINING-OUT STOCK—SPRING, 1949



Transplanted Liners, from Field Beds

*Juniperus glauca* hetzi X, 6 to 10 ins.    *Andorra Juniper* X, 6 to 9 ins.    *Irish Juniper* X, 6 to 8 ins.    *Pfitzer Juniper* X, 5 to 8 ins.

### 2-year and 3-year, field-grown plants

Our Spring, 1949, Catalog is out now, write for it.

X indicates number of times transplanted.

	Each per 100	Each per 1000
<i>Althaea</i> ( <i>Hibiscus</i> ) <i>syriacus</i> , sdlg., 1-yr., 4 to 10 ins.	\$0.04	\$0.03
<i>Azalea kaempferi</i> hybrid, X, 3 to 6 ins.	.15	.13
<i>Azalea mollis</i> , XX, 4 to 6 ins.	.25	.22
<i>Azalea mollis</i> , XX, 6 to 9 ins.	.45	.40
<i>Berberis thunbergii</i> , X, 4 to 8 ins.	.04	.03
<i>Buddiella davidi</i> <i>superba</i> , sdlg., 1-yr.	.05	..
<i>Buxus microphylla</i> <i>koreana</i> , X, 3 to 5 ins.	.20	..
<i>Buxus sempervirens</i> , X, 2 to 4 ins.	.12	..
<i>Buxus suffruticosa</i> , X, 2 to 4 ins.	.12	..
<i>Calycanthus floridus</i> , sdlg., 6 to 10 ins.	.04	..
<i>Celtis occidentalis</i> , sdlg., 6 to 12 ins.	.04	..
<i>Chamaecyparis filifera</i> , 4 to 6 ins.	.18	..
<i>Chamaecyparis filifera</i> <i>aurea</i> , X, 5 to 8 ins.	.18	.13
<i>Chamaecyparis lawsoniana</i> , sdlg., 3 to 5 ins.	.04	.03
<i>Chamaecyparis lawsoniana</i> <i>allumii</i> , X, 4 to 6 ins.	.15	.13
<i>Chamaecyparis lawsoniana</i> <i>allumii</i> , X, 6 to 9 ins.	.20	.18
<i>Chamaecyparis lawsoniana</i> <i>pendula</i> , sdlg., 1-yr., 4 to 6 ins.	.05	.04
<i>Chamaecyparis plumosa</i> , X, 5 to 9 ins.	.18	..
<i>Chamaecyparis plumosa</i> <i>aurea</i> , X, 4 to 6 ins.	.18	.16
<i>Euonymus carrierei</i> , X, 5 to 8 ins.	.10	.08
<i>Euonymus carrierei</i> , XX, 8 to 12 ins.	.15	.14
<i>Euonymus coloratus</i> , X, 4 to 8 ins.	.08	.07
<i>Euonymus fortunei</i> <i>erecta</i> , X, 4 to 8 ins.	.10	.08
<i>Ilex crenata</i> , X, 4 to 6 ins.	.17	.16
<i>Ilex crenata</i> <i>bullata</i> , XX, 4 to 6 ins.	.17	..
<i>Ilex rotundifolia</i> , XX, 4 to 6 ins.	.18	.17
<i>Juniper</i> , <i>Andorra</i> , X, 6 to 9 ins.	.17	.16
<i>Juniper</i> , <i>Andorra</i> , XX, 6 to 9 ins.	.24	.23
<i>Juniperus chinensis</i> <i>pfitzeriana</i> , X, 3 to 5 ins.	.18	.17
<i>Juniperus glauca</i> <i>hetzi</i> , X, 6 to 10 ins.	.18	.17
<i>Juniperus horizontalis</i> <i>glauca</i> , X, 6 to 10 ins.	.18	.16
<i>Juniper</i> , <i>Irish</i> , X, 3 to 5 ins.	.14	.13
<i>Juniper</i> , <i>Irish</i> , X, 5 to 8 ins.	.18	.17
<i>Larix europaea</i> , sdlg., 1-yr., 2 to 5 ins.	.03	.02
<i>Leucothoe cuneata</i> , X, 2 to 4 ins.	.12	.11
<i>Pieris japonica</i> , X, 5 to 8 ins.	.45	.40
<i>Pieris mariana</i> , XX, 8 to 12 ins.	.30	..
<i>Poplar</i> , <i>Lombardy</i> , 2-yr., 2 to 4 ft.	.08	.06
<i>Taxus capitata</i> , X, 4 to 6 ins.	.14	.13
X, 6 to 8 ins.	.18	.17
XX, 4 to 6 ins.	.18	.17
<i>Taxus cuspidata</i> , X, 4 to 6 ins.	.13	.12
X, 6 to 8 ins.	.18	.17
XX, 4 to 6 ins.	.18	.17
<i>Thuja elegantissima</i> <i>lutea</i> , XX, 4 to 6 ins.	.18	.17
<i>Thuja elegantissima</i> <i>lutea</i> , XX, 6 to 9 ins.	.22	.20
<i>Thuja ellwangeriana</i> , X, 6 to 8 ins.	.18	.15
<i>Thuja globosa</i> , X, 3 to 5 ins.	.12	.11
X, 5 to 8 ins.	.17	.16
<i>Thuja plicata</i> <i>douglasii</i> , X, 4 to 8 ins.	.18	..
<i>Thuja pyramidalis</i> , X, 4 to 6 ins.	.18	..
<i>Viburnum opulus</i> <i>nana</i> , X, 2-yr., 2 to 5 ins.	.10	.09

Orders for less than 25 of a variety not accepted. 25 at 100 rate; 300 at 1000 rate. 500 plants in variety of not less than 100 each at 1000 rate, 10% discount on orders of 5000 plants and over.

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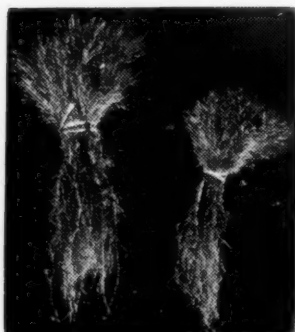
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Portion of material to be delivered immediately, and as long as planting season lasts and again in early fall. Please quote lowest prices on any portion.

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| 107 Acer Saccharum, 2 to 2 1/2 ins., BR          | 303 Taxus Cuspdata, 1 1/2 to 2 ft., B&B              |
| 47 Acer Rubrum, 3 to 3 1/2 ins., B&B             | 48 Taxus Cuspdata Hicksi, 1 1/2 to 2 ft., B&B        |
| 39 Acer Rubrum, 2 to 2 1/2 ins., BR              | 815 Forsythia Suspensa, 2 to 3 ft., BR               |
| 48 Platanus Orientalis, 3 to 3 1/2 ins., B&B     | 425 Forsythia Intermedia Spectabilis, 2 to 3 ft., BR |
| 34 Gleditsia Triacanthos, 3 to 3 1/2 ins., B&B   | 341 Ilex Crenata Microphylla, 2 to 2 1/2 ft., B&B    |
| 42 Fraxinus Americana, 3 to 3 1/2 ins., B&B      | 97 Lonicera Morrowi, 2 to 3 ft., BR                  |
| 11 Fraxinus Americana, 2 to 2 1/2 ins., BR       | 151 Pyracantha Coccinea Lalandi, 2 to 3 ft., B&B     |
| 43 Liquidambar Styraciflua, 3 to 3 1/2 ins., B&B | 64 Euonymus Alatus, 2 to 3 ft., BR                   |
| 99 Liquidambar Styraciflua, 2 to 2 1/2 ins., BR  | 506 Lonicera Syringantha Wolfi, 2 to 3 ft., BR       |
| 30 Ginkgo Biloba, 3 to 3 1/2 ins., B&B           | 276 Weigela Amabilis, 2 to 3 ft., BR                 |
| 13 Ginkgo Biloba, 2 to 2 1/2 ins., BR            | 222 Spiraea Anthony Waterer, 18 to 24 ins., BR       |
| 9 Quercus Palustris, 3 to 3 1/2 ins., B&B        | 113 Abelia Grandiflora, 2 to 3 ft., B&B              |
| 74 Quercus Palustris, 2 to 2 1/2 ins., BR        | 275 Lonicera Fragrantissima, 2 to 3 ft., BR          |
| 6 Quercus Rubra, 3 to 3 1/2 ins., B&B            | 265 Rhodotypos Kerrioides, 2 to 3 ft., BR            |
| 53 Quercus Rubra, 2 to 2 1/2 ins., BR            | 1630 Jasminum Nudiflorum, 1 to 2 ft., BR             |
| 326 Cornus Florida, 6 to 8 ft., B&B              | 408 Ligustrum Regelianum, 2 to 3 ft., BR             |
| 129 Oxydendrum Arboreum, 6 to 8 ft., B&B         | 58 Viburnum Dentatum, 2 to 3 ft., BR                 |
| 27 Magnolia Conspicua, 6 to 8 ft., B&B           | 1098 Kalmia Latifolia, 18 to 24 ins., B&B            |
| 52 Magnolia Soulangiana, 6 to 8 ft., B&B         | 54 Photinia Villosa, 4 to 5 ft., BR                  |
| 204 Pinus Strobus, 5 to 6 ft., B&B               | 62 Elaeagnus Multiflora, 3 to 4 ft., BR              |
| 44 Pinus Sylvestris, 5 to 6 ft., B&B             | 14 Rhus Cotinus, 3 to 4 ft., B&B                     |
| 158 Tsuga Canadensis, 5 to 6 ft., B&B            | 5552 Lonicera Halliana, 2-yr., field-grown, BR       |
| 95 Malus Spectabilis, 6 to 8 ft., B&B            | 675 Vinca Minor, 2-yr., field-grown, BR              |
| 55 Malus Hoppi, 6 to 8 ft., B&B                  | 2902 Hedera Helix, 2-in. pots                        |
| 33 Malus Floribunda, 6 to 8 ft., B&B             | 900 Pachysandra, 2-yr., BR                           |
| 51 Crataegus Coccinea, 6 to 8 ft., B&B           | 44 Regel Privet, 2 to 3 ft., BR                      |
| 55 Crataegus Crusgalli, 6 to 8 ft., B&B          | 134 Ampelopsis Lowi, 2-in. pots                      |
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Scotch Pine, 2-yr.  
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### SCOTCH PINE

**\$16.00 per 1000**

**Grown from Finest Strains of Seeds**

	Per 100 Per 1000	
2-yr. S. (2-0), 2 to 3 ins. ....	\$ 3.20	\$16.00
2-yr. S. (2-0), 3 to 4 ins. ....	5.00	25.00
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Special Strain Fine stock, well graded. Seeds from the hardiest, straight-stemmed, good color trees, from the finest forests in Europe. See photo.

3-yr. S. (3-0), 6 to 10 ins. ....	10.00	50.00
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ican plant that has seemingly been made for the gardener who needs a prostrate creeper for a moist spot in part shade. In such situations this plant will throw out threadlike, reddish stems which root as they travel and will carry its yellowish-green foliage and golden flowers far and wide. It blooms over much of the summer when conditions are right.

All varieties mentioned, with the exception of the last, which may be endlessly multiplied by division of the rooted stems, are usually best grown from seeds, though they may be grown with ease from cuttings if one wants to perpetuate some particular color.

### Squills.

A Pennsylvania reader of this column grew such fine *Scilla sibirica* plants from bulbs last fall that he plans to grow some of the other types himself, selling commercial stocks in the meantime, and wants a brief outline of additional kinds. He said in part: "I had two colored pictures of *S. sibirica* for counter display and found that they did a better job of selling the plants than I have ever been able to do by word of mouth."

I believe he has the right view on selling plant material outside its season of blooming.

Blue, a color that is welcome at any time of the year, is particularly desirable in early spring. Fortunately, it may be secured from the squills. In fact, few flowers of any season have a more decided blue than *S. sibirica*, which leaves nothing to the imagination, as one observer remarked. All scillas grow best in some shade, which makes them suitable for woodland plantings. Among the trees of a shaded path, even under pines and hemlocks, a trying situation for most plants, the scillas light up the early spring landscape with their intense blues.

Before the snow has melted away, the procession of blooms in the spring garden is joined by *S. sibirica*, to be followed later by *S. bifolia* in blue, rose and white; the English bluebell, *S. nutans*, and in late May by the lavender bells of *S. campanulata*. The last may be had in rose and white, too. The plant popularly known as the striped squill is really not a squill at all, but, nevertheless, it is a lovely plant with blue and white flowers. The small bulb, *Puschkinia scilloides*, blooms in March and April with the true squills and makes an attractive companion for them. Given a soil made light with leaf mold, it will increase in beauty from year to year.

### Three Questions.

In answer to the first of three questions which I recently received

from readers of this column, the little white-flowered cinquefoil which a reader said flowered in early spring is no doubt *Potentilla alba*, one of the earliest of the cinquefoils to bloom in the spring. A superficial observer might take it for a strawberry plant, but its leaves are much smaller, and the plant seldom exceeds four or five inches in height. It is a free grower and spreads to broad masses, but it has never appeared weedy here in northern Michigan.

In searching through my catalogs, I could not find an American source of supply for *Galium mollugo*. That is not as it should be because the plant has definite value as a cut flower, filling the same role as baby's breath. Because it is naturalized in some Atlantic coast states, collectors in that section should be able to supply seeds at least.

*Erodium trichomanefolium* is hardy in northern Michigan; so I see no reason why it would not stand West Virginia winters. Reputed difficult to grow by some, it never gave any trouble in our trials under ordinary erodium treatment, which includes a well drained soil and sunshine. It makes a carpet of pretty geranium-like leaves, over which pink flowers bloom for a long time.

#### STATE ROSA MULTIFLORA PRODUCTION INCREASED.

With the demand for *Rosa multiflora* from farmers and sportsmen far greater than expected, plans are under way in Illinois for the state nurseries to increase production. Leonard Schwartz, director of conservation, said that output has been geared to reach 5,000,000 seedlings in 1949. This goal is more than twice last year's production, and in 1950 the state-operated nurseries are expected to produce 10,000,000 seedlings.

Although northern Illinois and southern Illinois have ample cover for game birds and animals, the central section is almost void of protective cover during winter. Tests have proved that *Rosa multiflora* provides by far the best protective game covering of any plant experimented with during a decade of field testing. *Rosa multiflora* is planted mostly as field borders, replacing wire fences and many other types of hedgerows, as in three or four years' growing time this shrub produces a living fence that will hold stock as well as wire.

A NURSERY is being started by Theodore Laub, 234 Questend avenue, Pittsburgh, Pa.

## You May Need Some of These

### IN STORAGE — IMMEDIATE SHIPMENT

#### SHADE TREES

	Per 10	Per 100
Lombardy Poplar		
5 to 6 ft., br.	\$2.90	\$25.00
4 to 5 ft., br.	2.20	18.00
6 to 8 ft., whips		
(\$175.00 per 1000)		22.50
Chinese Elm		
6 to 8 ft., transplants	8.00	75.00
5 to 6 ft., root-pruned seedlings	5.50	50.00
4 to 5 ft., root-pruned seedlings	2.50	22.00
3 to 4 ft., root-pruned seedlings	1.20	10.00
Hardy Fruiting Almond		
4 to 5 ft., br.	8.00	75.00

#### PRIVET

	Per 100	Per 1000
Amur River North		
2 to 3 ft., 5 canes	\$18.00	\$160.00
18 to 24 ins., 3 canes	10.00	90.00
12 to 18 ins., 3 canes	7.50	65.00
12 to 18 ins., 2 canes	6.00	50.00

#### ROSES

No. 1, field-grown	Per 10	Per 100	Per 1000
	\$5.50	\$50.00	\$450.00

American Beauty, deep pink.  
Ami Quinard, dark velvety crimson.  
Briarcliff, rose-pink.  
Condesa de Sastago, copper and pink.  
Cynthia, glowing red.  
Editor McFarland, brilliant pink.  
Frau Karl Druschki, white.  
Golden Charm, fine yellow.  
Grenoble, scarlet-red.  
K. A. Viktoria, white.  
Luxembourg, coppery-yellow.  
Poinsettia, deep velvety red.  
Soeur Therese, chrome-yellow.  
Sunburst, yellow.  
Talisman, apricot gold pink.  
Red Talisman, red.

#### PEONIES

Standard, 3 to 5-eye.

	Per 10	Per 100
Duchess d'Orleans, deep pink, late	\$3.00	\$25.00
Edulis Superba, deep old rose-pink, early	3.50	30.00
Fontenelle, large, deep red, midseason	4.50	40.00

#### FALL BULBS

It's time to begin thinking about Tulips, Hyacinths, Narcissi, Crocuses and your other needs. Our price list will soon be ready. Send for it!

#### TREE SEEDLINGS

	Per 100	Per 1000
Green Ash		
18 to 24 ins.	\$3.00	\$25.00
12 to 18 ins.	1.90	16.00
6 to 12 ins.	1.20	10.00
Chinese Elm		
3 to 4 ft.	4.00	32.00
2 to 3 ft.	2.50	22.00
18 to 24 ins.	1.90	16.00
12 to 18 ins.	1.40	12.00
Hackberry		
6 to 12 ins.	1.75	15.00
Hansen Bush Cherry		
6 to 12 ins.	4.00	35.00
Honey Locust, Thornless		
6 to 12 ins.	1.40	12.00
Locust, Black		
2 to 3 ft.	2.90	25.00
6 to 12 ins.	.90	8.00
Osage Orange		
12 to 18 ins.	1.20	10.00
6 to 12 ins.	.80	7.00
Persimmon, American		
12 to 18 ins.	5.50	50.00
9 to 12 ins.	4.00	35.00
6 to 9 ins.	3.00	25.00
Prunus Japonica		
6 to 12 ins.	7.00	60.00
Walnut, Black		
12 to 18 ins.	3.50	30.00
6 to 12 ins.	2.50	20.00

#### LINING-OUT STOCK

	Per 100	Per 1000
Cydonia Japonica, layers	\$ 7.00	\$ 60.00
Euonymus patens, R.C.	6.00	50.00
Euonymus rad. coloratus, R.C. from sand	7.00	60.00
Hydrangea PeeGee, layers	12.00	100.00
Juniperus (Juniper) communis depressa, 2-in. pots	25.00	200.00
chinensis pfitzeriana, 2 1/4-in. pots	30.00	250.00
chinensis hetzi, 2-in. pots	25.00	200.00
chinensis hibernica, 2-in. pots	20.00	150.00
sabina vonehron, 2 1/4-in. pots	30.00	250.00
Lonicera sempervirens, R.C.	6.00	50.00
Lonicera yunnanensis, 2-in. pots	8.50	70.00
Wistaria sinensis, layers	7.00	60.00

## WILLIS NURSERY COMPANY OTTAWA, KANSAS

"Your Wholesale Nurserymen"



# This Business of Ours

*Reflections on the Progress and Problems of Nurserymen*

By E. Sam Hemming

## EXOTIC EVERGREEN TREES.

Nurserymen often have been accused of growing and selling the easily grown plants and neglecting the other, more choice types. In reality, the reverse is often true; nurserymen have too frequently wasted their energy and profits growing plants that have little or no commercial use. The unavailability of certain plants from nurseries benefits the customer, for many of the rarer types of plants are suitable only for arboretums or for plant hobbyists.

We at Eastern Shore Nurseries, Inc., Easton, Md., like many other nurserymen, have grown our share of these plants unusual to our area, and I should like to describe the experiences we have had with some kinds of evergreens not usually grown in our part of the country. Among the types we have grown are *Araucaria imbricata*, monkey puzzle; *Cunninghamia lanceolata*, Chinese fir; *Sequoia gigantea*, redwood; *Cedrus atlantica*, Mount Atlas cedar; *Libocedrus decurrens*, California incense cedar; *Sciadopitys verticillata*, umbrella pine; *cephalotaxus* species, plum yews, and *Cupressus sempervirens*, Italian cypress.

With two exceptions, our experiences with these trees have been unsatisfactory. Some years ago we germinated about 1,000 monkey puzzle trees, placing each seed in an individual pot. The first year the plants grew to from two to four inches in height. Soon individual plants started to die without any apparent cause, so that by the second year, when they were plants out in beds, the number of trees was cut in half. They continued to die one by one until at the end of three years there were only about a dozen left, which we planted in a display border. By the next year one tree remained, and we gave it to a customer, who could not keep it alive. These plants did not lack water, shade nor drainage, nor were they killed by winter freezing.

Outside the living room window on the south side of my house is a 30-foot Chinese fir, the last one left at the nursery and one of the last two or three in the community. This tree is sensitive to cold, and our plantings were killed by low temperatures. Zero degree is the tree's low temperature limit, and wind protection is necessary. It is a handsome tree, and,

in my opinion, the cut foliage is the most attractive green imaginable for Christmas decorations.

My father tried to grow redwoods many years ago at the Canterbury Nurseries, Easton, thinking that the climate of the Chesapeake bay area would resemble that of northern California. But in this case, too, it was a little too cold. I recall that one of the redwoods reached about twenty-five feet in height.

Having grown the cedar of Lebanon and the Deodara cedar, we thought we should try the Mount Atlas cedar at our nurseries. We grew about 100 specimen plants and started to sell them when they were from two to three feet and from three to four feet in height. Out of the



Musser Norway Spruce Seedling  
3-yr.—8 to 12 ins.

Average Norway Spruce  
3-yr. Seedling

### NORWAY SPRUCE

2-yr. S., 2 to 3 ins. .... \$25.00 per 1000  
3-yr. S., 8 to 12 ins. .... 60.00 per 1000

**MUSSER FORESTS, Inc.**  
INDIANA, PA.

## GROUND COVER PLANTS

*Pachysandra terminalis*, Per 100 Per 1000  
Assorted field-grown plants ..... \$ 6.00 \$50.00  
*Vinca minor*, 2 1/4-in. pot-grown plants ... 10.00 90.00  
*Hedera helix*, 2 1/4-in. pot-grown plants ... 10.00 85.00

**HUGH B. BARCLAY**  
NARBERTH, PA.

## POTTED LINERS

### GRAFTS

(Beetle Certified)

**HEASLEY'S NURSERIES**  
Freeport Rd. BUTLER, PA.

100 I doubt that we transplanted more than one successfully. We took every known balling precaution, and I am positive that on many of the plants there was not even a crack in the ball. Still they died. For one dissatisfied customer we replaced a Mount Atlas cedar three times. This tree is even more difficult to transplant than a fire thorn.

The incense cedar is one of the rare evergreen trees we have grown with success. This gray-green, fastigiate-shaped tree with foliage like that of an arborvitae is a good subject for the climate along the Eastern Shore of Maryland, one that we will continue to grow. It is a rapid grower and must be given plenty of room.

We have grown *Sciadopitys verticillata* in small quantities, but it seems to be a tree that grows for a while and then dies without any apparent reason. Dry weather is

## CHINESE CHESTNUT TREES

SPECIALLY SELECTED STRAINS  
HIGHLY BLIGHT-RESISTANT  
SIMILAR TO OUR OLD  
MOUNTAIN CHESTNUT

	Each per 10	Each per 100
2 to 3 ft. ....	\$0.85	\$0.70
3 to 4 ft. ....	1.00	.90
4 to 5 ft. ....	1.25	1.10
5 to 6 ft. ....	1.65	1.50

These are nicely rooted, and larger sizes are well branched stock that will please your customers.

Can supply in large quantities now while assortment is complete.

**BOUNTIFUL RIDGE NURSERIES**  
Princess Anne, Md.

## HEMLOCK

**Rhododendron — Kalmia  
Azalea**

**CURTIS NURSERIES**  
CALICOON, N. Y.

## EVERGREENS

Seedlings and Transplants  
Spring, 1949  
Write for price list.

**SUNCREST EVERGREEN NURSERIES**  
JOHNSTOWN, PA.

## "Get to Know LEGHORN'S for Your Quality Evergreens"

With Spring just around the corner, now is the time to place your orders for lining-out stock. We have some exceptionally fine stock in the items listed below. Order now and look forward confidently to Spring with liners from LEGHORN'S.

<b>Taxus Cuspidata</b>	Per 100	Per 1000	<b>Taxus Hatfieldi</b>	Per 100	Per 1000
2-yr., T. ....	\$30.00	\$250.00	2-yr., T. ....	\$ 30.00	\$250.00
3-yr., T, heavy, cutback, beautiful plants .....	35.00	300.00	<b>Taxus Capitata,</b> cutting type from leaders.		
<b>Taxus Cuspidata Nana</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00	5-yr., TT., 15 to 18 ins. ....	90.00	850.00
4-yr., TT. ....	50.00	450.00	12 to 15 ins., seedling type	150.00	....
5-yr., TT. ....	65.00	600.00	<b>Taxus Columnaris Mooni</b>		
<b>Taxus Intermedia</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00	<b>Thuja Pyramidalis</b>		
5-yr., TT. ....	50.00	450.00	2-yr., T. ....	30.00	250.00
7-yr., TTT, 10 to 12 ins. ....	75.00	700.00	<b>Thuja Boothi</b>		
<b>Taxus Hicksi</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00			
4-yr., TT. ....	50.00	450.00			
6-yr., TTT. ....	90.00	850.00			

We cannot accept orders for less than 100 of a size and variety. 250 plants furnished at the 1000 rate. Write in for prices on our B&B evergreens, also, as we believe we are growing some of the finest evergreens to be found.

### LEGHORN'S EVERGREEN NURSERIES

Geer St.  
CROMWELL, CONN.

probably its worst enemy. The tallest I have ever seen *S. verticillata* grow is about seven feet.

The two plum yews, the fastigiate and the spreading varieties, were also grown successfully here. These plants have the same hardiness as the Irish yew. In color, habit and character the spreading type appeals to customers as strongly as *Taxus brevifolia* does. The fastigiate type is broader than the Irish yew or even Hicks' yew and has just as good color.

We grew the Italian cypress with the hope that we could depend a little less on Irish and Swedish junipers for inexpensive fastigiate plants, but this variety of cypress proved to be too winter sensitive. A temperature of from 10 to 15 degrees Fahrenheit is about the lowest it can stand. It is the tall tree with dark green foliage which is common to the Italian countryside and is desirable where it can be grown successfully.

Recently, Dr. Skinner, of the Morris Arboretum, Philadelphia, Pa., gave us a metasequoia tree in exchange for some other plants. Unfortunately, it died. This tree recently was discovered in China's hinterland and is a relic of a prehistoric age. It is related to the sequoia tree grown in the United States. There have been a number of articles

### EVERGREENS

#### Northern-grown

Canadian Hemlock  
American Arborvitae  
Balsam Fir

	Per 100	Per 1000
2 to 4 ins., sdgls. ....	\$0.80	\$ 5.00
3 to 6 ins., sdgls. ....	1.50	10.00
6 to 9 ins., sdgls. ....	2.50	15.00
9 to 12 ins. ....	6.00	40.00
12 to 18 ins. ....	8.00	65.00

Freshly collected. Well rooted. Puddled and packed in sphagnum moss. Catalog of plants, ferns, etc., on request.

**WILLIAM CROSBY HORSFORD**  
CHARLOTTE, VERMONT

### We Offer—

**EVERGREENS**—In a large assortment of **PYRAMIDAL** and **GLOBE ARBORVITAE**, **PFITZER JUNIPER** and **YEW**s in grades at attractive prices. **SOME LARGE SPECIMEN EVERGREENS, SHRUBBERY and SHADE TREES.**

Mail want list for prices.

**THE WESTMINSTER NURSERIES**  
Westminster, Md.

### KOSTER BLUE SPRUCE

Choice Koster grafts, 11 to 12 ins. out of 3-in. pots, \$155.00 per 100.

Shipments made the latter part of May when grafts are well hardened off.

Check with order, packing free.

### FADDEGON'S NURSERIES

Niskayuna, New York

Leading propagators of Koster Blue Spruce since 1920.

### LILACS

**French Hybrids and Standards** in 30 best cut flower varieties.

1-yr. grafts, \$25.00 per 100; \$200.00 per 1000.

Ask for Descriptive List.

Also list of *Taxus* and other liners for Spring, 1949, shipment now ready.

**DEERFIELD NURSERIES**  
DEERFIELD STREET, P. O., N. J.

## BEFORE BUYING EVERGREENS—See Us

Our shippers are prepared to ship BALLED and BURLAPPED EVERGREENS in carload lots and can supply Japanese beetle certificates.

### ARBORVITAE

### HEMLOCK

### TAXUS

Our quality cannot be excelled.

	Each 100 rate		Each 100 rate
<b>Taxus cuspidata, B&amp;B</b>		<b>Taxus media Halloran, B&amp;B</b>	
15 to 18 ins. ....	\$2.25	15 to 18 ins. ....	\$2.50
18 to 24 ins. ....	2.75	<b>Taxus media hicksi, B&amp;B</b>	
2 to 2½ ft. ....	4.50	12 to 15 ins. ....	2.00
<b>Taxus capitata (from seeds), B&amp;B</b>		15 to 18 ins. ....	2.25
15 to 18 ins. ....	2.50	18 to 24 ins. ....	2.50
18 to 24 ins. ....	3.00	<b>Taxus cuspidata nana, B&amp;B</b>	
2 to 2½ ft. ....	4.00	12 to 15 ins. ....	2.50
<b>Taxus media (Upright), B&amp;B</b>		15 to 18 ins. ....	3.75
18 to 24 ins. ....	3.00	<b>Thuja occidentalis pyramidalis</b>	
2 to 2½ ft. ....	4.00	2 to 3 ft. ....	2.00
2½ to 3 ft. ....	5.00	3 to 4 ft. ....	3.00
<b>Taxus media hatfieldi, B&amp;B</b>		<b>Tsuga canadensis</b>	
15 to 18 ins. ....	2.50	18 to 24 ins. ....	1.75
18 to 24 ins. ....	3.00	2 to 3 ft. ....	2.50
		3 to 4 ft. ....	3.50

Please refer to our ads on pages 21, 24 and 30 in the March 15 issue, for Lining-out Stock of all kinds.

**E. D. ROBINSON SALES AGENCY, Wallingford, Conn.**

*"A friendly, efficient service."*

**ROSES—No. 1, \$4.50 per 10; \$40.00 per 100, in the following varieties:**

#### HYBRID TEAS

Ami Quinard  
Betty Upchurch  
Caledonia  
Condesa de Santiago  
Dame Edith Helen  
Edith Nellie Perkins  
Etoile de Hollande  
Editor McFarland

E. G. Hill  
Joanna Hill  
K. A. Viktoria  
Luxembourg  
Lady Hillingdon  
Margaret McGredy  
McGredy's Scarlet  
Mrs. Chas. Bell

Pres. H. Hoover  
Pink Radiance  
Red Radiance  
Roslyn  
Sunburst  
Sœur Therese  
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**HYBRID PERPETUALS:** American Beauty, Frau Karl Druschki.  
**CLIMBERS:** American Beauty, Dr. Van Fleet, Silver Moon, Tallisman Climber.  
**POLYANTHUS:** Edith Cavell, Golden Salmon, Ideal, Katharina Zemet, Orleans.  
Write for quotations on 1000 lots.

**WAYNESBORO NURSERIES, Waynesboro, Virginia**

## ORNAMENTAL EVERGREENS

## Trees & Shrubs

### BAGATELLE NURSERY

P. O. Huntington Station, N. Y.

### KOREAN PINE (Nut Pine)

For PARKS and ESTATES

3 to 5 feet

### ELFGREN NURSERIES

East Killingly, Connecticut

## KOSTER NURSERY

Division of Seabrook Farms

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BRIDGETON, N. J.

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Specializing in the propagation of grafted lining-out stock of all kinds. Write for our new list of lining-out stock.

### BERBERIS THUNBERGI

Per 100 Per 1000

9 to 12 ins., 2-yr. S. .... \$4.00 \$35.00  
12 to 18 ins., 2-yr. S. .... 5.00 40.00

### BROUWER'S NURSERIES

Box 25 NEW LONDON, CONN.

written about the tree in scientific periodicals, and it will be interesting to see how well it grows in this country. I am sorry we could not give it a better test at our nurseries.

E. S. H.

### MAGAZINE FEATURES HASTINGS FAMILY.

The family of Donald Hastings, president of H. G. Hastings Co., Atlanta, Ga., is featured in an article, "Welcome to Floweracres," in the April issue of the Ladies' Home Journal. One of a series on "How America Lives," the article is illustrated with photographs of Mr. and Mrs. Hastings and their daughter and son and their 1,513-acre plantation, Floweracres, at Atlanta.

In 1919 H. G. Hastings bought the property to use as a seed testing ground and for growing nursery stock. He had founded the H. G. Hastings Co. at Interlachen, Fla., and had operated the firm there for ten years. In 1899 the business, which at that time was handled by Mr. Hastings and five employees, was moved to Atlanta to take advantage of better opportunities for distribution. The founder remained in the office of president for fifty-three years, developing the organization from a small retail firm to one of the outstanding seed companies in the country. The firm now has retail stores at Atlanta, Chattanooga, Charleston and Birmingham.

Mr. Hastings' son, Donald, was born at Atlanta in 1901. After graduating from the college of agriculture at the University of Georgia, Athens, in 1922, he joined his father in business and in 1942 was made president of the firm when his father resigned and became chairman of the board of directors.

Donald Hastings served as president of the Southern Nurserymen's Association in 1948 and is a past president of six other horticultural organizations, including the Southern Seedsmen's Association, the Georgia Rose Society, the Georgia Horticultural Society, the Georgia Seedsmen's Association, the Men's Garden Club of America and the Men's Garden Club of Atlanta.

His wife, Louise, who coauthored with him "Southern Garden Book," which is now in the third edition, is active in garden clubs. For seven years she has served on the board of the National Council of State Garden Clubs and has served as president of her local club and of the Garden Clubs of Georgia. Despite their numerous community activities, the interests of Mr. and Mrs. Hastings cen-



# GOOD NEWS

## the GRAVELY Model D Tractor

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*Better than Ever!*

*Yes...* the time-proved, Narrow-Row Cultivator, favorite of Commercial Growers for 27 Years, is back — IMMEDIATE DELIVERY



The Gravelly offers Five distinct advantages. All you have to do is get behind it at work—your common sense does the rest. You realize immediately the superiority of its SINGLE-WHEEL TRACTION and FRONT TOOL HITCH, giving: (1) Increased

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ter chiefly in and around their home, a Southern colonial brick house with a white-pillared entrance portico. On one side of the house is a garden with four terraces, featuring camellias, star jasmine and rare flowers. Mr. Hastings' hobbies are growing roses and vegetables. Baking, sewing, entertaining and general homemaking occupy much of Mrs. Hastings' time, with club activities adding to her busy life.

The Hastings have a son, Donald, 19, a junior at the college of agriculture at Cornell University, Ithaca, N. Y., who plans to join his father in business soon, and a daughter, Mary Louise, 22, a graduate of Vassar College, Poughkeepsie, N. Y., who was one of sixty students chosen to study last summer at the School of Extramural Studies, at Stratford on Avon, England.

ARP NURSERY CO., Tyler, Tex., sold all of its capital stock and financial interest in Consolidated Nurseries, Inc., Tyler, March 12. At the same time, Clark Kidd resigned from the position of secretary-treasurer of that firm and returned to active participation with L. B. Dean and L. A. Dean in the Arp Nursery Co.

### NORTHERN-GROWN LINING-OUT EVERGREENS

Abies balsamea	Per 100	Per 1000
4 to 8 ins.	\$4.00	\$25.00
8 to 12 ins.	8.00	60.00

Thuja occidentalis	Per 100	Per 1000
3 to 6 ins.	3.00	20.00
6 to 12 ins.	5.00	40.00

Tsuga canadensis	Per 100	Per 1000
4 to 8 ins.	4.00	25.00
8 to 12 ins.	5.00	40.00

All the above stock is first-quality collected seedlings.

### NURSERY-GROWN HEMLOCKS

Tsuga canadensis	Per 100	Per 1000
8 to 12 ins.		

2-yr. transplants. \$16.00 \$150.00

12 to 15 ins., 2-yr. transplants. 25.00

18 to 24 ins., 3-yr. transplants. 40.00

Send for complete wholesale list.

ISAAC LANGLEY WILLIAMS  
P. O. Box 352 Exeter, New Hampshire



## EVERGREENS

Hardy, northern, collected stock.

Canadian Hemlock

American Arborvitae

Balsam Fir

	Per 100	Per 1000
2 to 4 ins., sdgls.	\$0.80	\$ 5.00
3 to 5 ins., sdgls.	1.50	10.00
6 to 9 ins., sdgls.	2.50	15.00
9 to 12 ins.	6.00	40.00
12 to 18 ins.	8.00	65.00

All first-quality stock, well rooted and packed in sphagnum moss.

Cash, please.

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## FOR 51 YEARS

*Our business has been growing*

Rhododendrons

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Perennials, Roses

All Nursery Items

**BOBBINK & ATKINS**

E. RUTHERFORD, N. J.

# New Books and Bulletins

this Batsford color book an unusual charm.

## TREES OF SANTA BARBARA.

In any community the searching tree lover will find more species growing than at first meet the eye, and the hunt is fascinating. Some localities contain an amazing variety, by reason of climatic conditions. Still others boast a larger number because of the trees established there from other parts of the world by earlier enthusiasts. Both of these favorable conditions exist at Santa Barbara, Calif., and in addition the near-by valleys, mountains and islands afford additional native species.

Maunsell Van Rensselaer, director of the Santa Barbara Botanic Garden, has revised his book on "Trees of Santa Barbara," first issued in 1940, and in the enlarged edition are listed 745 living species and varieties, as well as 366 formerly tried but not known to exist there at present. This handsome book of 228 pages is published in clothbound and paperbound editions by the Santa Barbara Botanic Garden and the Santa Barbara board of park commissioners.

The notes on individual trees are necessarily brief. They are written for understanding by the amateur, and the book is not in any sense a flora of the locality. The author's purpose is to provide a handy illustrated guide to the trees growing within approximately fifty miles of Santa Barbara. The locations of more than 1,000 noteworthy or characteristic specimens are given.

The trees are listed alphabetically by genera. Included in the brief description of each species are its country of origin, family, characteristics and extent of cultivation in the region.

The new edition includes some 200 species found at Santa Barbara since 1940, as well as a systematic index and a list of trees formerly tried there.

The great amount of research and time put on an unpretentious book of this character can only be imagined. The result is highly useful to residents of and visitors to the beautiful California city. Doubtless it will be of interest as well to plantmen elsewhere, especially those in the milder sections of this country.

## FLOWER LITHOGRAPHS.

Sixteen color lithographs of traditional English flowers, such as foxgloves and cornflowers, and exotic plants, such as Mexican zinnias and

Chinese asters, reproduced from early nineteenth century drawings by Jane Webb Loudon, comprise most of the book, "Garden Flowers," recently published at \$2 by B. T. Batsford, Ltd., New York city. The plates were chosen from Mrs. Loudon's volumes, "Flower Garden of Annuals," "Perennials" and "Bulbous Plants."

In the introduction which accompanies the plates, Robert Gathorne-Hardy traces the history of flower illustration, describing various methods of reproducing the drawings, including the color lithographs used for Mrs. Loudon's illustrations. He also relates interesting details about the milestones in the development of flower illustration and the personalities who hastened this development.

Notes on the color plates, which describe the flowers, list the dates and locations of their introductions and provide brief information on their present-day use in England, are also contributed by Mr. Gathorne-Hardy.

His informal history, combined with the lifelike, colorful plates, gives

## FLOWERS IN COLOR.

"Favorite Flowers in Color" is an interesting collection comprised of 300 full-color plates which show more than 800 flowers, including flowering trees and shrubs, roses, mixed borders and bulbs. Edited by E. L. D. Seymour, horticultural editor of the American Home, who was assisted by a staff of experts in their respective fields, the book is published by Wise & Co., at \$4.95 per copy.

The attractive illustrations are supplemented by generous descriptive captions, reference tables and text discussing the general characteristics, culture and other details of the varieties shown. The 634-page book is divided into five main sections, each of which has been authored by an expert in his field.

"Trees, Shrubs and Vines" is discussed by Henry E. Downer, who has been horticulturist and superintendent of the grounds of Vassar College since 1921. A native of the Isle of Wight, Mr. Downer gained wide practical experience on English

## LAST CALL!

## TAXUS HICKSI

## QUALITY LINERS

## IMMEDIATE DELIVERY

2-year heavy transplants in field beds. Nice tops, unusually good roots.

6 to 8 inches	Each
1000 or more	\$0.16
300 or more	.18
100 or more	.20

Cash with order.

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Wholesale Nurseries

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**TUBEROUS-ROOTED BEGONIAS**

Belgian-grown. Colors available: Scarlet, Yellow, Orange, Salmon, White, Crimson, Copper, Rose and Mixed.  
Double (Camellia) or single types.

	Per 100	Per 1000
1½ to 2-in.	\$ 9.50	\$ 80.00
2-in. and up.	14.00	125.00

**PEONIES**

Strong 3 to 5-eye divisions  
\$3.00 per 10, \$25.00 per 100, \$225.00 per 1000.  
Delicatissima. Light pink  
Duchess d'Orleans. Pink  
Edulis Superba. Old rose  
Queen Victoria. White  
Reine Desfleurs. Cherry

**BLEEDING HEARTS**

Dielytra spectabilis. True old-fashioned type.

	Per 100	Per 1000
3 to 5 eyes.	\$30.00	\$260.00
5 to 8 eyes.	40.00	360.00

**DAHLIAS**

A special collection of 100 strong divisions,  
at least 10 varieties.  
Packed in Cellophane and Peat for Counter Sales.  
Price: \$17.50 per collection.

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private estates and at a nursery which specialized in woody plants. He is a graduate of the Royal Botanic Gardens at Kew.

The section entitled "Roses" is written by Paul F. Frese, who gained considerable experience with roses while working for the Conard-Pyle Co., West Grove, Pa. He has served as regional vice-president and counselor of the American Rose Society and since 1938 has been editor of the Flower Grower.

The author of the sections on "The Mixed Border" and "Bulbs," James G. Esson, was for many years superintendent of one of Long Island's noted estates and is widely recognized as a lecturer, flower show judge and writer on gardening subjects. Since 1942, he has been editor of the Gardeners' Chronicle of America, and since 1946 he has been official consultant of the Horticultural Society of New York.

"The Rock Garden" is discussed by Thomas H. Everett, horticulturist of the New York Botanical Garden since 1932, who was, prior to that time, employed on two Westchester, N. Y., estates noted for their gardens and plant collections.

"Favorite Flowers in Color" should find favor with readers not only because of its beautiful color plates,

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but also for its clear, concise, easy to read text which makes it a handy reference.

### WILD FLOWERS.

Approximately 500 species of wild flowers, found chiefly in the middle west, are described in "Kansas Wild Flowers," by William Chase Stevens, professor emeritus of botany, University of Kansas, Lawrence. The book contains 761 reproductions of photographs taken by the author, which show both natural settings and close-ups of the flowers described in the text. Fruiting as well as flowering stages are illustrated.

Published at \$7.50 by the University of Kansas Press, Lawrence, the book is enlivened by information on the use of many of the plants as herbs by the pioneers and Indians. The explanation of the origins of scientific names, an introduction and a glossary are helpful to readers who are unfamiliar with the technical terms used. In the introduction, Mr. Stevens describes the plant as a whole, the functions of each part, the production of seeds and the effects of environment on the plant. He gives a detailed description of the Kansas prairie and the general physiography of the sunflower state and includes a key to the families of the plants mentioned in the text.

The author gathered much of the material for his book from annual botanical expeditions throughout Kansas over a period of twelve years. Despite its title, "Kansas Wild Flowers" covers plants found in other parts of the country and might well be entitled "American Wild Flowers." The detailed descriptions and illustrations make this book valuable for identification and reference purposes, as well as for informational reading.

### PLANTS AT DENVER.

Beginning with January and following the calendar through December, S. R. De Boer describes the plants to look for at each season and the places to find them at Denver, Colo., in an informal little book, "Around the Seasons in Denver Parks and Gardens," illustrated by Frances White and published by Smith-Brooks Press, Denver.

A city planner and landscape architect at Denver, Mr. De Boer writes in a casual and enjoyable manner of plants and seasons, gardening and planning and emphasizes that his chief purpose is to interest the reader in the parks and other outdoor areas of Denver. Though unscientific in presentation, the book contains



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much authentic information on plants. The twenty-two reproductions of clever pen and ink drawings by Frances White carry out the informal tone which the author gives his book.

Mr. De Boer claims that the residential areas of Denver and many other Colorado cities are actually more perfect garden cities than some of the famous ones of Europe and the eastern United States, and he believes that this should be given more publicity.

Concluding the 144-page book are lists of the most common plants found in Denver's parks and of the new varieties being grown in Colorado nurseries.

#### STONE MULCHING.

Although stone mulching has been disregarded by gardeners since early Roman times, when Virgil and Pliny recommended it for orchards and vineyards, it is now being used successfully again, according to J. I. Rodale, author of a new book, "Stone Mulching in the Garden," published by Rodale Press, Emmaus, Pa., at \$3.

Mr. Rodale, editor of Organic Gardening, includes in his book letters from readers of the magazine telling of their experiences with stone mulching and praising the

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method. He reports that recent studies have shown that the practice preserves soil moisture, protects the surface soil from erosion by water, allows the free run of tree and vine roots, regulates temperatures and provides plants with valuable nutritive elements as the stones decompose.

Descriptions of the effects of stone mulches on plants grown in the experimental gardens of Organic Gardening at Allentown, Pa., are included, as well as accounts of the practices of rock-pilers and pot-holders in the American tropics. Several articles which have appeared in the magazine, written by persons who have applied stone mulches, are featured in the latter half of the 164-page book.

### STUDYING HYBRIDIZATION IN NATURAL CONDITIONS.

Methods for studying plant hybridization under natural conditions, both outside the laboratory and the breeding plot, are described in a scientific manner in "Introgressive Hybridization," by Edgar Anderson, geneticist at the Missouri Botanical Garden, Gray Summit, and Englemann professor of botany at Washington University, St. Louis, Mo. Published by John Wiley & Sons, Inc., New York city, at \$3, this book is one of the first volumes in the Wiley Biological Series, a group of small books covering various topics in biology, designed to give scientists an opportunity to review quickly the works and ideas of men who are specialists in their respective fields.

Not attempting to pass any judgments on the importance of plant hybridization in evolution, Dr. Anderson endeavors to discuss his subject outside the area of mere opinion and to take it into the zone of analysis and measurement. The methods of studying hybridization, some of which are published for the first time, are described in such a way that the effects of hybridization in natural populations may be measured and the forces at work in these populations may be understood.

In one section of the book, information is given on how to draw up a detailed taxonomical description of a species without having seen it. Observation and measurement are refined to a point where they can be used for analysis as well as for description. Most of the techniques presented in the 109-page volume are comparatively simple ones developed for analyzing interspecific and intraspecific variation.

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subject of introgressive hybridization of plants together for the first time, Dr. Anderson includes information on introgression in iris and in finite populations, on the ecological and genetic bases of introgression, on introgression and evolution and on special techniques for studying introgression.

### FLOWERING IN PLANTS.

Though the physiology of flowering has no basis as yet in the general physiology and biochemistry of the plant, much experimentation has been carried on in this field. Important practical applications to the agriculture of both temperate and tropical areas have resulted from these experiments.

"Vernalization and Photoperiodism," an international symposium by A. E. Murneed, R. O. Whyte and others, is an account of the early history of research and the recent progress in the United States and Europe on factors leading to flowering in plants. The book, edited by Dr. Frans Verdoorn and published, at \$4.50, by the Chronica Botanica Co., Waltham, Mass., and Stechert-Hafner, Inc., New York city, deals chiefly with the effects of temperature and light on plant flowering.

Some of the topics included are nutrition and metabolism as related to photoperiodism, the length of day in climates of past geological eras and possible effects on changes in plant life, and wave length dependence and the nature of photoperiodism.

The 196-page book is the last of a series of titles which were announced by Dr. Verdoorn before the war and which have been published one by one during the past seven years. It contains several tables, which increase the effectiveness of the text, and a 32-page supplement in German.

The symposium is especially valuable because it covers not only pure research on vernalization and photoperiodism, but also the many applications to agriculture and the relationships between this work and that in other sciences.

### ECOLOGY OF PLANTS.

To bring his text for elementary classes in plant ecology up to date, W. B. McDougall has revised and rewritten several sections of the fourth edition of "Plant Ecology," recently published by Lea & Febiger, Philadelphia, Pa., at \$4.

Mr. McDougall, a naturalist of the national park service, Natchez Trace

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Dwarf Mugho Pine, 2-0	.....	4.00	30.00
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ORNAMENTAL NURSERY STOCK

Parkway, Tupelo, Miss., has enlarged the book to include new information on soil formation from rocks and plant successions on rock, food relations of insectivorous plants, phenology and ecology as it applies to conservation. He has also revised the sections on the southeastern hardwood and coniferous forests to agree with results of current research.

Although the subject matter of the text has been increased, compactness has been retained by resetting the material. The book deals with the different plant parts and their relation to their environments. The influences of air, soil, weather, temperature and growth habits are described, and the types, activities and trends of plant communities are surveyed.

Especially helpful to teachers is an appendix containing suggested problems. Facts for the general public, as well as the student, are included in the book's 234 pages, however. Because the application of ecological facts in the use of plant materials contributes much to the success of a nurseryman or landscape planter, this book holds special interest for men in these fields.

### SHADE TREE PROCEEDINGS.

The proceedings of the twenty-fourth annual meeting of the National Shade Tree Conference, held August 23 to 27 at Milwaukee, Wis., have been reported in a 216-page bound volume edited by Dr. Paul E. Tilford, Wooster, O., and published by the Collier Printing Co., Wooster.

Among the topics of the papers presented are tree pruning, epidemic elm diseases, oak wilt, personnel maintenance, soil and fertilizers, mist blower application of sprays and outdoor education. Panel discussions on insecticides and fungicides and on the use, planting and maintenance of shade trees are also recorded, as well as a meeting of city foresters, park superintendents and others interested in public area management problems held August 25.

In addition, the book contains an account of the business proceedings of the National Shade Tree Conference.

### BULLETINS RECEIVED.

Because poplars are among our fastest-growing trees and easiest of propagation, they have been the subject of selection and breeding in many countries in the search for a tree which would produce large volumes of suitable wood quickly. Poplar wood is in demand for pulpwood,

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## BOXWOOD GARDENS

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vener, boxboard, etc. Trials of some of these hybrids are reported in "Hybrid Poplar Planting in the Lake States," by Paul O. Rudolph, silviculturist with the Lake States Forest Experiment Station, University Farm, St. Paul, Minn. Station paper No. 14, dated December, 1948, contains seventeen mimeographed pages, of considerable interest to those interested in hybrid poplars.

Methods and equipment for planting forest trees, the best types of trees to plant under various conditions of soil and climate and the common causes of failures in these plantings are described in "How to Succeed with Forest Plantations," a recent bulletin of the Wisconsin conservation department and the extension service of the college of agriculture, University of Wisconsin, Madison. Written by Fred B. Trenk and William H. Brener, the 24-page booklet shows by pictures, drawings and tables, as well as by the text, the correct ways of planting forest trees. Particularly valuable are the tables which summarize the text and list the best species, the main objectives, the land preparation and planting methods and the spacing for various types of soils and conditions.

"Water Economy of Plants," by H. L. Shantz, published as No. 6 in Volume I of leaflets of the Santa Barbara Botanic Garden, Santa Barbara, Calif., is the outcome of a request made of the author in the summer of 1948 to share with the gardeners and farmers of that area his knowledge regarding the behavior of plants during periods of insufficient rainfall, gained during his many years with the United States Department of Agriculture. During the past year the shortage of water was so acute at Santa Barbara that rationing was necessary in some areas. This 28-page pamphlet contains much general information upon the use of water by plants and their response to drought, with some concluding practical suggestions.

APPLICATION to operate a nursery on Lamar street near Prescott road at Memphis, Tenn., has been granted U. T. Stapleton, Sr., by the county board of adjustment at Memphis.

AFTER traveling by plane to this country from his home at Copenhagen, Denmark, Svend Rosedale is visiting his brother, Harry, president of the Monrovia Nursery Co., Monrovia, Calif. Another brother, William, also resides at Monrovia, and this is the first time in twenty years that the three have been together.

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<b>Juniperus Virginiana (Red Cedar)</b>	
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## OBITUARY

### William F. Allen.

William Francis Allen, 82, a pioneer in the Del-Mar-Va peninsula's strawberry industry and president of W. F. Allen Co., Salisbury, Md., died March 21 at his home at Salisbury.

Born in 1867 at Allen, Md., Mr. Allen attended school there. When he was 15 years old he invested a borrowed \$15 in strawberry plants. This was the beginning of the W. F. Allen Co., which today has 900 acres in plants and orchards and specializes in the growing of strawberry plants.

Mr. Allen was instrumental in introducing melon culture in the Eastern Shore area, successfully pioneering the commercial growing of cucumbers, cantaloupes and watermelons. He was a former president of the Maryland State Horticultural Society and of the Del-Mar-Va Horticultural Society, a Mason, a member of the Salisbury chamber of commerce and a charter member and second president of the Rotary Club.

Mr. Allen also was president of the Salisbury branch of the County Trust Co. of Maryland and of the Farmers & Planters Co., Salisbury, as well as a director and vice-president of the Peninsula Broadcasting Co.

Survivors include his widow, Mrs. Martha Taylor Allen; three sons, all associated with W. F. Allen Co., Fulton White, Albert Gillis and William Lee, all of Salisbury; eight grandchildren, and three great-grandchildren.

### Curtis K. Plumb.

Curtis Keen Plumb, 83, nurseryman, horticulturist and landscape gardener, died February 19 at his home at Darien, Conn.

Mr. Plumb began his nursery career working with his father in the Green Hill Nursery, Milton, Wis. For eight years he was manager of the A. H. Griesa Nurseries, Lawrence, Kan., and later became associated with the Mount Hope Nurseries, Rochester, N. Y., and with Swain Nelson & Sons, Chicago.

In 1917 he joined Stephen Hoyt's Sons Co., Inc., New Canaan, Conn., and after five years went into business for himself. Later he became affiliated with his son, John C. Plumb, Tuckahoe, N. Y., superintendent of Woodlawn cemetery.

Mr. Plumb was a member of Harmony lodge, F. and A. M.; a life

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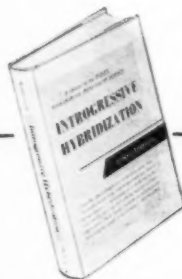
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member of Acata chapter, O.E.S., both of New Canaan, and a life member of the New Canaan Grange.

Survivors include Mr. Plumb's widow, Mrs. Grace Heacock Plumb; three sons, John, Tuckahoe, N. Y.; George R., New London, Conn., and Lyman E., Rocky Hill, and a daughter, Mrs. Paul Howe, Stamford.

### Anton Vandereem.

Anton Vandereem, owner of the Wilbur Nursery, St. Louis, Mo., died April 2. Active in trade organizations until recent years, Mr. Vandereem was the first president of the Landscape and Nurserymen's Association of Greater St. Louis, which was founded about twenty years ago.

He was also a member of the St. Louis Florists' Club.

Survivors include Mr. Vandereem's widow and one son.

### Henry Bender.

Henry Bender, who conducted a nursery business at Affton, Mo., died March 4.

## SOUTHWESTERN NOTES.

Lowell Adee, Topeka, Kan., who recently received a B.S. degree in horticulture from Kansas State College, Manhattan, now is employed by Mount Arbor Nurseries, Shenandoah, Ia.

Arbor day, which is set by law in Kansas as the last Friday of March, was observed by the Topeka schools when redbud trees were made available for students to purchase and plant wherever they wished. The Sarber Nursery Co., Topeka, furnished both transplants, which sold for 75 cents, and seedlings, for 15 cents.

Cook & Cone, Ottawa, Kan., was the low bidder on a roadside improvement project in Rawlins county, Kansas, with a bid of \$2,363.

Harland R. Stoll, Greeley, Colo., has opened a nursery named Harland's Plant & Floral Gardens.

B. C. Hays, Hays Nursery & Orchard Co., Wynnewood, Okla., has been forced to discontinue his nursery business temporarily because of damage to his nursery by an oil refinery across the road.

Wilson's Greenhouse & Gardens are the name of the new nursery and floral business operated by I. M. Wilson at 2601 North Glenstone street, Springfield, Mo.

Claude Roberts has started a nursery on U. S. route 40, ten miles east of Kansas City, Mo. He has brothers in the nursery business at Hickman Mills and St. Joseph, Mo.

W. H. Martin, businessman and civic leader at Parsons, Kan., gave 3,000 redbud trees to residents of his town to aid in a city beautification project which may help compensate for some of the damage caused by the ice storms of January. A committee of the Parsons Garden Study Club has arranged for distribution of the trees.  
J. J. P.

CHARLES F. VOKAL is leaving Old Spinning Wheel Gardens & Nursery to go into business at Devine, Tex., as Wayside Gardens & Nursery.

THE opening of the Freeport Garden Center, Inc., has been announced by Lyman Duryea, Duryea's Flower Shop, 8 North Main street, Freeport, N. Y.

A BUILDING 22x32 feet is being erected by Shaner's Nursery, New Kensington, Pa., on Route 28 at Fox Chapel and Freeport roads, Pittsburgh. Opening of the new building, which will include a full line of nursery stock and garden tools, was scheduled for March 1.



## LAST CALL FOR ROSES

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Cl. Talisman  
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## Tile Drainage

Problems relating to tile drainage for nursery land were discussed at the Ohio short course for nurserymen by Prof. Virgil Overholt, department of agricultural engineering, Ohio State University. The short course, sponsored by the university, was held January 18 and 19 at Columbus.

Professor Overholt gave a brief history of tile drainage in Ohio. He pointed out that, while tile drainage has been used for many years in Ohio, it is only in the past twenty-five years that the installation of the system has really developed. There are now enough county outlet ditches in Ohio to reach around the world if placed end to end.

He pointed out that in Ohio there is often a period of ten minutes or so when it rains at the rate of 500 tons of water per hour per acre, and it is impossible for the ground to soak up this amount of water and still remain productive. The problem confronting the Soil Conservation Service is to control the runoff of excess water through use of proper soil management and mechanical drainage aids such as tile, terraces, contour practices, etc. The farmer or nurseryman must learn how to control the excess water and how to live with it.

According to Professor Overholt, there are many factors to be considered when deciding how extensive a tile drainage system should be for a particular field. Some of the more important factors include the tolerance of the plant or crop to excess water in the soil, the cash value of the crop compared to the cost of installing the system, increased aid in general farm practices and the physical condition and organic content of the soil.

Contrary to popular belief, tile drainage will remove only excess water from the soil. That is the water which would eventually drain out by gravity and which is only filling up the normal air space of the soil. Gravitational water is not available to plants anyway, and by its removal the soil air and soil water relationships are greatly improved. The water available to the plants is held by capillary force in the tiny pore spaces in the soil and cannot be drained off by gravitational forces. The permanent deep water table is affected little, if any, by the installation of tile drainage.

Professor Overholt went on to point out some of the major prob-

lems and causes of failure in tile drainage systems. One of the most common causes of failure is poor outlets. Either the outlet ditch is not deep enough to carry the water, or else it is too level and will not carry the water away fast enough. Another common fault is neglect of outlet ditches until they fill up with silt and trash and stop up the drainage system. When this occurs, it is usually too late to save the drainage system without digging it up and cleaning it out.

Poor grade of the ditch and dips in the tile also cause considerable trouble. Silt and mud collect in the dips and form a dam which eventually fills up the system and prevents its proper function.

The quality of the drain tile used is important to its proper functioning. The early tile often is not hard enough; consequently, it disintegrates and the system clogs. This factor has necessitated the reinstallation of many drainage systems.

A good clay or shale tile should have a low porosity, be resistant to freezing and thawing, have a high crushing point and contain no cracks.

In regard to the crushing point, Professor Overholt said that the agriculture engineering department would be glad to run a test on the strength of tile samples for Ohio farmers. Tile should withstand a pressure of at least 1,600 pounds per square inch. It should also have a hard or glazed surface and should ring with a high-pitched tone when tapped.

With concrete tile it is difficult to check the quality. The best test is to see how much pressure it requires to crush the tile. Concrete tile should also have a low porosity, be resistant to freezing and thawing and be uniform in size. Concrete tile should not be used in muck or peat soils, as it deteriorates rapidly in such situations.

The trouble with many tile drainage systems is that they are too complicated, use too much material and have too many outlets to maintain.

The speaker stressed that an important point to remember in planning a tile drainage system is to keep

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the design or plan simple, using as few outlets as possible and depending upon larger mains to carry off the water. The outlets should be constructed of the proper material, because it is exposed to the weather and is subjected to much freezing and thawing. The outlet should be covered with a screen to keep out small animals. Another important point, according to Professor Overholt, is that a complete record or map of the tile system should be made, drawn to scale to aid in proper maintenance and further expansion.

The question of depth and spacing is difficult to answer, he continued. It depends upon soil condition, soil profile, crops grown and the contour of the land. The average depth is a minimum of thirty inches and a maximum of about thirty-six inches. This depth will afford protection from freezing and thawing and eliminate the risk of mechanical damage.

The spacing of laterals depends upon the type of soil, but an average figure for heavy soil is two rods apart. The size of the mains will depend upon the amount of water they have to carry and the amount of grade to the line. The capacity of a main depends upon the amount of fall in the line, as well as its size.

Professor Overholt concluded his talk by emphasizing that it will always pay to obtain experienced help when laying out a tile system. Never guess at the grade; measure it accurately, he warned.

In answer to one of the many questions from the group, Professor Overholt stated that at present concrete tile is slightly cheaper than clay tile. When asked if it was necessary to backfill the ditch with porous material, such as gravel or sand, he replied that it helps, but probably the advantages do not outweigh the cost.

Tree roots will not bother a tile drain which carries an intermittent stream of water, but with a tile drain which carries a live stream of water the year round, it will be necessary to seal the joints in the area of a tree to keep out the roots.

The last question concerned the point of entrance of water into a tile line. Professor Overholt said that the water entered the tile at the unsealed joints and at the lower side of the joint first. If a tile is so porous that the water enters through the tile itself, it will soon disintegrate.

E. E. J.

A FORMER grower for John Connon, Waterdown, Ont., Canada, H. N. Hearder, Dundas, Ont., has started a nursery since his discharge from the armed forces.



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Growers of Blueberries Since 1920.

## TIME TO ORDER FOR SPRING PLANTING!

We have the famous **NEW SUPERFECTION** Everbearing Strawberry. Get started with this superior Everbearer now. Our stock is direct from the originator. Write for prices today.

We also offer the following list of stock for immediate shipment.  
All prices F.O.B. Bridgman, boxing at cost. Per 1000

Cumberland Black Raspberry, No. 1 tips.....	\$30.00
New Logan Black Raspberry, No. 1 tips.....	30.00
New Morrison Black Raspberry, No. 1 tips.....	37.50
Latham Red Raspberry, 1-yr., No. 1.....	45.00
Concord Grapevines, 1-yr., No. 1.....	50.00
Concord Grapevines, 2-yr., No. 1.....	65.00

We also have a surplus in Elberta and Halehaven Peach and other varieties of Strawberry plants. Your Want List will be appreciated.

### The ACKERMAN NURSERIES

Bridgman, Michigan  
Telephone 34F2

#### FRUIT TREES, 2-year A GOOD LINE FOR '49

We offer a good assortment of 2-year-old **FRUIT TREES**. Apple, Std. and Dwarf Pear, Sweet and Sour Cherry, Quince, Plum and Prune, including a good supply of nice **Stanley Prune**, one-year Peach.

We shall be pleased to receive your list of wants for low quotations on **HARDY, UPLAND-GROWN TREES**.

Carload lots a specialty.

Wholesale only.

**ROBERTS NURSERY CO.**  
DANVILLE, N. Y.

#### CERTIFIED AND GUARANTEED

#### direct from grower to you BLUEBERRY NURSERY STOCK

Scions, Rooted Cuttings and 1 to 4-yr.-old plants.

Let us quote you our low prices.  
We will deliver any order of 10,000 or more plants direct to you. (Radius of 1,000 miles.)

**G. ALLOWAY & SON**  
Marlton Pike and Webster Ave.  
Merchantville, N. J.

#### SMALL FRUIT PLANTS

Evergreens — Shrubs  
Asparagus — Rhubarb

Send for Complete Trade List.

**W. N. SCARFF'S SONS**  
NEW CARLISLE, O.

#### NOW OFFERING

#### A COMPLETE LINE OF SMALL FRUIT PLANTS

We will be glad to quote  
on your requirements.

**ANDREWS NURSERY  
CO.**  
FARIBAULT, MINN.

#### STILL AVAILABLE IN QUANTITY

Such Items As:

Latham Raspberries, No. 1 and 2.  
Chipman's Canada Red Rhubarb  
New Rhubarb (Valentine)  
Pixwell Gooseberry, 2-1 and 1-1  
Red Lake Currant, 2-1.  
Plum and Bush Cherry, seedlings.

#### SUMMIT NURSERIES

STILLWATER, MINN.

#### FRUIT TREES

Apple, Peach, Pear, Plum and Cherry.

Write for price list.

**GOLDEN EAGLE NURSERY**  
Golden Eagle, Ill.

#### We wish to purchase..

Evergreens, Fruit Trees,  
Shrubs, etc.

Send your surplus list to

**THE PONTIAC NURSERY CO.** Romeo, Mich.

#### COVER ILLUSTRATION.

#### Diospyros Virginiana.

The fruit and foliage lend continued interest to the persimmon, *Diospyros virginiana*, a familiar tree in the southeastern United States, from southern Pennsylvania and southern Iowa down to the gulf and west to the border of Texas. The generic name is said to be translated "food for the gods," a tribute to the sweet fruit when it is ripe, said to have food value second only to the date. The fruit is a true berry and is quite astringent in its orange-colored summer form, but turns blackish-purple and sweet after frost. The berries are from an inch to one and one-half inches in diameter. Staminate flowers usually are borne on one tree, and pistillate flowers on another. The flowers are yellowish-green to milky-white and urn-shaped, appearing like small bells on the new shoots in May or June when the leaves are but partly grown.

The persimmon tree grows slowly and to only moderate size, up to fifty feet in the north, though over 100 feet in favorable locations in the south. Its crooked branches, set at a wide angle to the trunk, give an open and irregular effect to the foliage of the round-topped cylindrical crown. It is more symmetrical in its favored open location where it is dry and sunny. The root system of few fibers causes difficulty in transplanting. The bark, deep brown to black, is deeply divided in small blocks.

The alternate leaves, oval and from three to seven inches long, are a deep glossy green above and pale beneath. Hanging in a vertical plane, they give the tree a distinctive appearance. As livestock and deer do not browse on the foliage, the persimmon survives in open pastured land. On the contrary, the fruits furnish food for birds, hogs and human beings. Trees bear when young, and in the same locality the fruits will ripen at different times, affording food for wild life over a prolonged period. Quality of fruit varies in different trees and can be reproduced by grafting or budding.

The heartwood of the persimmon is dark brown or black. This tree is the most northern member of the ebony family, the others being largely tropical or subtropical. One other species of persimmon occurs in the United States, *Diospyros texana*, limited to southwestern Texas.

Of limited value for landscape purposes, the persimmon has its uses, as indicated by the foregoing description. It is seldom seriously attacked

by insects, but a fungus disease, per-simmon wilt, causes losses in some localities.

### PRIZE FOR ZINNIA NAME.

Garden flowers are getting into the big money, now that Procter & Gamble are offering \$25,000 as a first prize and \$25,000 in additional prizes for a name to be given a big red zinnia just developed by the W. Atlee Burpee Co., in a contest to close April 30. The contest, which is being heavily advertised in national magazines, of course requires that proposed names be accompanied by box tops from packages of the soap products manufactured by the company.

### SHADE TREES SELL.

Sales of shade trees and flowering trees in larger sizes, from about six to sixteen feet, have been surprisingly good this season, according to Henry J. Hohman, Kingsville Nurseries, Kingsville, Md., who reports:

"It has been amazing that there has been such a heavy demand for trees this spring. Our oaks were sold out completely the first week our ad appeared in the American Nurseryman, and since then not less than ten times the number we had on hand could have been sold.

"Pink dogwoods have had a heavy demand, and one tradesman bought one entire block of these containing about 1,000 trees ranging from eight to fourteen feet.

"Another call came for 1,000 trees plus many other items that had not been listed in the ad. Many sales could be mentioned that have been made from our ad, and we are only too glad to advise you that the American Nurseryman is a 'darn' good medium of advertising."

THOMAS J. TUNNEY, Tunney & Son Nurseries, Kenosha, Wis., has returned home from spending the winter in Florida.

A NURSERY has been started as part of Bonnie Brae Farms, Newnan, Ga., owned and operated by R. C. ("Scottie") Young.

OWNERSHIP of the Shaffer Nurseries, Clearwater, Fla., was taken over March 1 by John B. Somers, who has been associated in the business for the past few years with his uncle, B. E. Shaffer. Mr. Shaffer will continue to be associated with the nurseries and will devote most of his time to research and growing new varieties.

PEACHES						
	11/16-	9/16-	7/16-	5/16-	2 to	18 to
	in.	in.	in.	in.	3 ft.	24 ins.
G. Jubilee .....	90	450	1800	1200	590	...
J. H. Hale .....	80	300	700	500	315	120
CHERRIES, 1-yr.						
	5/16-	2 to	18 to	24 ins.	18 ins.	
	in.	3 ft.	24 ins.			
Montmorency .....			2500	1200		
Napoleon .....	200	20	100	160		
Schmidt .....	400	...	230	307		
Windsor .....	550	...	250	220		
PLUMS and PEARS, 2-yr.						
	11/16-	9/16-	7/16-	5/16-		
	in.	in.	in.	in.		
Blue Damson .....	180	300	200	70		
Grand Duke .....	110	120	70	28		
Shrops. Damson .....	...	250	400	75		
Stanley Prune .....	150	220	120	...		
Bartlett .....	80	260	180	...		
Kieffer .....	70	200	100	...		
	5/8-in.	1/2-in.	3/8-in.	4 ft.	3 ft.	24 ins.
Dwarf Bartlett .....	26	375	366	23	84	26

### IN FIELD

1-yr. Shrops. Damson, Stanley and Italian Prune Plums, 9/16-in., 7/16-in. and 5/16-in.  
 1-yr. Bartlett and Kieffer Pears, 9/16-in. and 7/16-in.  
 Downing Gooseberries—2100, 2-1; 2100, 2-2.  
 Red Jacket Gooseberries—650, 2-1; 600, 2-2.  
 Cumberland Raspberry Tips—35,000.  
 Logan Raspberry Tips—11,000.

State number wanted for special quotation.

### MICHIGAN FRUIT GROWERS' NURSERIES

Phone 6914

1500 U. S. 12, Benton Harbor, Mich.

## Yours For Growing Satisfaction

A Wonderful Growing Season has enabled us to produce this year the finest stock we have grown in a complete assortment of

APPLE PEACH CHERRY GRAPE  
 SHRUBS EVERGREENS SHADE TREES

Write for your wholesale list.

Wire or phone for special quotations.

Adelbert E. Weston, Pres.  
 Bryan Williams, Treas.

Joe Weston, Vice-pres.  
 Vaughn Woodard, Sales Mgr.

## NEOSHO NURSERIES CO. NEOSHO MO.

### SURPLUS

### Strawberry Plants

We still have a good supply of most varieties in our modern cold storage. Write, phone or wire for prices and varieties still available.

### ANNA STRAWBERRY NURSERY

F. G. Anderson, Prop.

Phone 340

Anna, Illinois

### GRAPEVINES

Heavy, well rooted

2-yr. Concord and Niagara  
 1-yr. Concord

Hydrangea P.G.  
 Peach

Write for prices.

Thorne Brewster

### WILLOWBEND NURSERY

Davis Rd.

Perry, Ohio

### GRAPEVINES, CURRANTS, GOOSE-BERRIES and BERRY PLANTS.

All varieties of Small Fruit Plants drastically reduced. Write for special quotations on quantity lots.

### WEST HILL NURSERIES

Established in 1875 FREDONIA, N. Y.

### 1000 DWARF APPLE, DOUGIN, ONE-YEAR (MALLING V)

(STOCK GROWN BY US FOR 40 YEARS), 3 to 5 ft. McIntosh, Cortland, Double Red Delicious, Red Rome (Gaila).

RED LAKE RED CURRANT, heavy, 2-yr., No. 1.

STANDARD APPLE TREES, various, 1 1/2 to 3-in., 7 to 9 ft., bearing.

AMERICAN ARBOVITAE, up to 10 ft.

LILACS ON OWN ROOTS, leading varieties, flowering, up to 7 feet.

HEAVY PLANTS FOR LANDSCAPING.

Write for List.

SAMUEL FRASER NURSERY

GENESEO, N. Y.



# California News

## MARCH MEETING OF SAN JOAQUIN VALLEY GROUP.

Guest speakers at the March meeting of the San Joaquin Valley chapter of the California Association of Nurserymen were Frank James, Oakland, president of the California Association of Nurserymen, and Charles Burr, Palo Alto. In a brief talk, Mr. James told members that the state association's refund from insurance would be about thirty per cent and that the association had concluded the year with a bank balance of \$4,000. He also reminded members of the refresher course for nurserymen May 10 and 11 at California Polytechnic school, San Luis Obispo, and informed them that there would be a directors' meeting April 26 at the Claremont hotel, Berkeley.

To amplify his talk on retail sales advertising, Mr. Burr showed several illustrated advertising folders and examples of newspaper advertisements. A letter from the California Association of Nurserymen was read, urging members to write their assemblymen and congressmen opposing bills No. 125 and No. 126 in the assembly and bill No. 575 in the Senate.

By the time of the convention of the American Association of Nurserymen in July the membership committee of the San Joaquin Valley chapter hopes to have a paid membership of 600, Chairman W. B. Stribling, Stribling Nurseries, Merced, announced.

Virgil E. Cripe, Sec'y.

## SANTA CLARA BULLETIN.

The Santa Clara County Nurserymen's Association plans issuing a news bulletin to the gardeners in the area served by its members. The first number carried one page of garden information, and the reverse side was devoted to the announcement of a contest for a name to be given the news bulletin.

Contestants were asked to write a statement of not less than fifty words and not more than 100 words on the subject, "What Services I Expect My Nursery to Offer Me." The prize offered is a \$25 merchandise order on any of the participating nurserymen.

## VENTURA, CALIF.

In the three years since the Mets Nursery was moved out to 2379 East Main street, stores have been built in

the vicinity so rapidly that parking is an approaching problem and land values have advanced so that Clarence Mets has been offered several times the purchase price for the three lots occupied. Consequently, he suspended completion of some features of his garden supply store, contemplating possible removal of the nursery farther out from the business district or his retirement from business.

In the rear of the Bird Nursery, Dr. W. F. Mosher has considerable plantings of strelitzias and camellias for cut flowers, and some trials of other less common plants by the retired physician yield material for the adjacent Bird Nursery.

Bird's Garden Supply is operated at the old Mets location, at 2222 East

## Bearing-size BLUEBERRY PLANTS

	Cabot	Rancocas	Concord	Pioneer	Stanley	Rubel	Jersey	Burlington
	Each per 10				100			
6 to 12 ins.	\$0.40				\$0.30			
12 to 18 ins.	.50				.40			
18 to 24 ins.	.60				.50			

Prices are per plant and for 2 and 3-yr. stock. Well branched and heavy rooted.



We can give immediate shipment.  
**BOUNTIFUL RIDGE NURSERIES**  
Princess Anne, Md.

## WE OFFER... Our General Line of SMALL FRUIT PLANTS

Let us quote on your requirements.

**L. J. RAMBO'S WHOLESALE NURSERIES**  
Bridgman, Michigan

## CHIPMAN'S RED RHUBARB

Large, true-to-name divisions.  
\$15.00 per 100, \$120.00 per 1000.  
Cash with order, packing free.

**KEELER'S GARDENS**  
Sioux Falls, S. D.

## AMERICAN NURSERYMAN

Main street, by Andrew Bird, Jr., present president of the Tri-County chapter of the California Association of Nurserymen. An extensive assortment of gadgets and supplies is displayed in the building fronting the nursery, in which a good variety of stock is carried.

Across the corner, the Ventura Nurseries, 2170 East Main street, operated by Clifford Melton and C. E. ("Bud") Kauer, offer supplies and plants in variety, with much space

## CHERRY TREES

Montmorency and Early Richmond

	Per 100
11/16-in. cal.	\$60.00
9/16-in. cal.	45.00
30 at 100 rate. Packing free.	

## CHINESE ELMS

	Per 1000
12 to 18 ins.	\$11.00
18 to 24 ins.	15.00
300 at 1000 rate. Packing free.	

## M. MEYER NURSERY

5439 S. Hydraulic St.  
WICHITA 15, KAN.

"Where satisfaction is always guaranteed."

## WE CAN STILL SUPPLY

Apples, fine, 2-year, all grades.  
Peach Trees, 1-year-old stock, all grades and latest popular varieties.  
Plums and Apricots—we still have a good supply.  
Cherry Trees, Early Richmond and Montmorency.  
Shade Trees and Evergreens.  
A few good Pecans and Roses.  
June Bud Peaches, now ready for sale. Good lot of varieties.

Write for Prices.

**COMMERCIAL NURSERY CO.**  
Nicholson Bros. DECHERD, TENN.

## STRAWBERRY PLANTS

We offer in quantity the following varieties:

Aroma	Tenn. Beauty
Blakemore	Tenn. Shipper
Dunlap	Tenn. Supreme
Klondike	Gem
Klonmore	Missionary

Streamliner

Write for prices.

## MULLINS PLANT FARMS

410 Brookfield Ave.  
CHATTANOOGA 4, TENN.  
Phones: 2-9955-4-2575

under lath given to camellias at present.

Out on Telegraph road, the Mound Nurseries are given over almost entirely to the propagation of camellias and the patented *Pyracantha duvalli*, which Ralph Curtis says he cannot produce rapidly enough to meet the demand. About 40,000 in gallon cans and nearly 10,000 in 5-gallon cans show a uniformity that is a sight to see.

When Walter J. Knecht sold his nursery and florists' business somewhat over a year ago, he moved his favorite plants out to the two acres on Foothills boulevard, where he and Mrs. Knecht are planting it out while they give the finishing touches to their home construction. The extensive variety in the gardens makes these a plantsman's delight, even though in the formative stage. A small greenhouse permits Mr. Knecht to continue some propagation for the trade.

#### SANTA BARBARA, CALIF.

The shortage of water at Santa Barbara and vicinity the past year, causing rationing of it for the household and curtailment for the garden, discouraged the purchase of nursery stock by the public. But the rains the past month, while less than normal, have been twice those of last year, and activity in the nursery salesyards has been more like its usual springtime volume. The January freeze did some damage in gardens, causing need for replacements, and the wave of home building adds to the demand for plants.

Damage by the freeze in nurseries was limited to tender plants, such as hibiscus, bougainvilleas, small palms, avocados and the like, although hardier subjects like eugenias were occasionally frozen back in one-gallon cans. As gallon-can material in the large wholesale nurseries to the south suffered considerable setback, some scurrying around has been necessary to find certain items of stock.

Kallman's Nursery, 228 Milpas street, moves large quantities of stock in its 2-acre salesyard by reason of an efficient staff, while Bert T. Kallman finds time from its supervision to maintain his energetic activity in civic efforts and trade work. Cymbidiums are a hobby, and he has a select collection growing and on sale at the nursery; so he did much in promotion of the recent cymbidium show here, in addition to judging at exhibitions elsewhere in the state. Now he is planning for the convention of the California Association of Nurserymen, to be held here next

## MONROVIA NURSERY'S SPECIAL CARTONS AND SPECIAL PACKING PROTECT STOCK AND CUT SHIPPING COSTS

Cartons are of sturdy, lightweight, re-inforced corrugated cardboard.



Buy Monrovia Nursery Company's Profit-Proved liners and know that your shipments will be in excellent condition when you receive them . . . that your shipping costs will be the lowest possible. Remember, only Monrovia Nursery provides you with these special cartons and particular type of safety packing!

Write for your free copy of our color illustrated catalog.



**monrovia**  
Nursery Co.

DUARTE RD AT MYRTLE AVE. P O BOX 196 MONROVIA, CALIF.

IMMEDIATE SHIPMENT TO ANY PART OF THE COUNTRY

#### Pronouncing Dictionary of Plant Names and Botanical Terms

64 pages, 3000 names, 25¢ per copy

AMERICAN NURSERYMAN

343 S. Dearborn St.

Chicago 4, Ill.

#### Learn ORNAMENTAL HORTICULTURE

A thorough, constructive home training for employment or advancement in Nursery Operations, Park Supervision or Maintenance, Landscape Designing or Landscape Gardening. Send for Free bulletin. APPROVED FOR VETERANS.

NATIONAL LANDSCAPE INSTITUTE  
Dept. N-15, 310 So. Robertson, Los Angeles 36, Calif.



Plants are transferred to light waxed paper pots before packing.



Each individually wrapped in paper to fit securely in carton.



## Nurseryman's Library

"A Nurseryman's library is not complete without books on plants, plant propagation and plant handling."

Here are some suggestions:

### TAYLOR'S ENCYCLOPEDIA OF GARDENING.

by Norman Taylor. \$5.00.

### CAMELLIAS ILLUSTRATED.

Edited by Morrie L. Sharp. \$5.00.

### FAVORITE FLOWERS IN COLOR.

Edited by E. L. D. Seymour. \$4.95.

### HOW TO INCREASE PLANTS.

by A. C. Hottes. \$3.00.

### PROPAGATION OF PLANTS.

by M. G. Kains and L. M. McQuesten. \$4.00.

### TREE EXPERTS' MANUAL.

by Richard R. Fenska. \$5.00.

### PRUNING TREES AND SHRUBS.

by E. P. Felt. \$2.50.

### NURSERY MANUAL.

by L. H. Bailey. \$5.00.

### FRIENDLY EVERGREENS.

by L. L. Kumlien. \$6.00.

### DISEASES AND PESTS OF ORNAMENTAL PLANTS.

by Bernard Dodge and W. L. Rickett. \$6.00.

### THE BOOK OF TREES.

by Alfred Hottes. \$4.00.

### THE BOOK OF SHRUBS.

by Alfred Hottes. \$4.00.

### THE BOOK OF PERENNIALS.

by Alfred Hottes. \$2.75.

### ROSES OF THE WORLD IN COLOR.

by J. Horace McFarland. \$5.00.

### LILACS FOR AMERICA.

by John C. Wister. \$1.00.

### CRAB APPLES FOR AMERICA.

by Donald Wyman. \$1.00.

These books can be obtained, at the publisher's price indicated, from

## AMERICAN NURSERYMAN

343 S. Dearborn St., Chicago 4, Ill.

September. Robert Kallman is following in his father's footsteps, recently talking on camellias before the local branch of the American Begonia Society. Both he and his younger brother, Theodore, are busy at the nursery salesyard.

The numerous camellia plants and other stock are being sold to clear the premises of De La Vina Gardens, at 1911 De La Vina street. The big greenhouse and the lath houses will be dismantled for removal to the 7-acre tract which M. Hume has purchased on Highway 101 north of the city. The present site is crowded in a growing store section.

W. D. Hurst, who conducts a salesyard at 1314 East Haley street, also does much landscape work, recently finishing a project of seventy-two houses for Johns-Manville Co. at Lompoc.

August Grimm finds increasing activity in his 2-acre Rosegarden Nursery, 606 West Pueblo street, on Highway 101. The big hibiscus bushes there were frozen to the ground in January.

Guilford and Todd Campbell, operating the Campbell Horticultural Co. since the death of their father two years ago, keep attractive the nursery salesyard at 19 South Milpas street, where bedding plants of improved strains, of their own propagation rival in public interest the extensive assortment of nursery stock, pottery and supplies.

Damage to palms outdoors was heavy at the City & Kentia Nurseries, on Modoc road, but the two big greenhouses housed large quantities of tender stock.

P. B. Grand, 130 West Carillo street, who is busy with rebuilding lawns after last year's drought, finds a Howard patent-rotary power hoe of English manufacture especially useful in soil where stones hamper tillers with tine cultivators.

Griffin & Morgan, 1715 Olive street, now have a large spraying rig, which supplements their activities in tree surgery and landscape planting. W. J. Griffin was trained in forestry and Raymond F. Morgan in tree care in the east; their meeting in military service at Pearl Harbor resulted in the postwar formation of this firm, two years ago, filling a need in this locality.

### FOR CALIFORNIA FARMS.

The state forestry nursery at Davis, Calif., announced the offer to ranchers this year of 27,000 trees, including Arizona ash, Russian olive, Chinese hackberry, *Ulmus parvifolia* and *Ulmus pumila*. Prices are from

## SURPLUS PATENTED ROSES

(No. 1's only)

200	Forty-Niner,	Each
	Pat. No. 792.....	\$1.25
100	Tallyho, PAF.....	1.25
50	Charlotte Armstrong,	
	Pat. No. 455.....	.75
50	Grand Duchesse	
	Charlotte, Pat.	
	Pend. ....	.75
100	Nocturne,	
	Pat. No. 713.....	1.00
100	Rubaiyat, PAF.....	.75
100	San Fernando,	
	Pat. No. 785.....	1.00
50	San Gabriel, PAF....	1.00
50	San Luis Rey, PAF....	1.00
100	Diamond Jubilee, PAF	1.00
50	Enchantment,	
	Pat. No. 737.....	.75
50	Taffeta, Pat. No. 716..	1.00
50	Chatter, Pat. No. 739..	.70
50	Ming Toy, PAF.....	.60
50	Pinkie, Pat. No. 712..	.75
100	Floradora,	
	not patented .....	.50

These bushes are in storage and in prime condition. All heavy No. 1's. CASH with order. No charge for packing.

**Staneck's**

*Landscape Nurserymen*

S. 172 Washington St.

Spokane 8, Washington



We pay shipping costs on lining-out stock to all points in the United States, Canada and Alaska. No packing charge is made on either lining-out or balled stock.

Write today for 1949 Wholesale List.

### SHERWOOD NURSERY CO.

EVERGREENS - Propagators & Growers  
Wholesale Only

141 S.E. 65th Ave., PORTLAND 16, ORE.

"Habit-forming"

### NORTHWEST TRADE JOURNAL

in monthly contact with  
this concentrated nursery market.

Subscriptions, \$1.00 per year.

OREGON NURSERYMAN & FLORIST  
CORVALLIS, ORE.



\$1.50 to \$2.50 each, and they are sold only in lots of fifty or more.

### SHELL CONSOLIDATES AGRICULTURAL MARKETING.

A new agricultural department to consolidate the marketing of all Shell Oil Co. and Shell Chemical Corp. agricultural products has been formed. L. V. Steck, marketing vice-president of Shell Chemical Corp., announced recently. The expanded agricultural unit now becomes a department of Shell Chemical Corp., with administrative offices at 50 West Fiftieth street, New York city. It will direct national sales of anhydrous ammonia, ammonium sulphate, soil fumigants, insecticides and herbicides.

F. W. Hatch, who formerly directed insecticide and herbicide sales as manager of Shell Oil's special products department at San Francisco, Calif., will be in charge of the new department. L. F. Stayner, who was formerly with the special products department at San Francisco and is a past president of the Pacific Insecticide Institute, will be assistant manager.

Marketing of agricultural products east of the Rocky mountains will be handled by the eastern division agricultural products department at 500 Fifth avenue, New York city, headed by E. E. Heuermann. For the west coast, G. W. Huldrum, Jr., will be agricultural products department manager, western division, with headquarters at San Francisco. E. F. Bashor and F. G. Steward will aid him.

### CATALOGS RECEIVED.

Forest Nursery Co., McMinnville, Tenn.—Wholesale price list of forest, shade and fruit trees; evergreens; flowering shrubs and hardwood cuttings; 12 pages, 4x9 inches.

Jackson & Perkins Co., Newark, N. Y.—Wholesale price list of ornamental, shade and fruit trees; shrubs; vines; evergreens; hardy perennials and roses; 24 pages and cover, 6x8 inches.

Lake's Shenandoah Nurseries, Shenandoah, Ia.—Wholesale price list of ornamental, shade and fruit trees; evergreens; ornamental shrubs; hedge plants; vines and roses; 40 pages, 6x9 inches.

Mount Arbor Nurseries, Shenandoah, Ia.—Wholesale descriptive price list of perennials and bulbs; 24 pages and cover, 6x9 inches.

Corliss Bros., Inc., Gloucester, Mass.—Retail catalog of evergreens, deciduous trees and shrubs, vines, roses, perennials, small fruits, annual seedlings and supplies; illustrated; 64 pages and cover, 4x9½ inches.

William Westwell & Sons, Leigh, England—Retail catalog and wholesale trade list of dahlia novelties; illustrated in color; 16 pages, 7½x9½ inches.

# Roses

## BUSHES CLIMBERS

## POPULAR and PATENTED

### OLD FAVORITES

### INTERESTING NEW VARIETIES

BE SURE TO WRITE EARLY FOR YOUR 1949 LIST

### WEEKS WHOLESALE ROSE GROWER



All Growing Fields in Ontario and Chino Valley, California.

Mail Address:  
O. L. Weeks, RFD 3, Box 323  
SANTA ANA, CALIFORNIA

Phone: Kimberly 2-4812



### OREGON'S BEST SOURCE OF GOOD ROSES

A complete list of HYBRID TEAS, CLIMBERS, BABIES and FLORIBUNDAS. Also, one of the most complete lists of patent varieties, including the A.-A. R. S. award winners.

SEND FOR OUR LISTS.

EASTERN REPRESENTATIVE:

FRANK C. DONOVAN  
5056 WASHINGTON BLVD.  
CHICAGO 44, ILL.

PETERSON & DERING  
ROSE GROWERS  
Scappoose, Oregon

### BALED SHINGLE TOW

(CEDAR SHAVINGS)

WM. A. JOHNSTON

1722 N. W. 15th St. Portland 9, Ore.

### CONIFER LINERS

	Per 100
Cham. laws. azarea (New), R.C.	\$12.00
Cham. laws. ellwoodi, R.C.	
250 at \$0.07 each	8.00
Cham. laws. ellwoodi, Tr.	
4 to 6 ins.	12.00
Cham. obtusa cripplsi, R.C.	8.00
Cham. pisif. squarrosa veitchi, R.C.	8.00
Juniperus chin. pfizeriana, R.C.	8.00
Juniperus excelsa stricta, R.C.	8.00
Juniperus comm. fastigiata, R.C.	8.00
Juniperus comm. fastigiata, Tr.	10.00
Thuja occ. aurea-variegata, R.C.	8.00
Thuja occ. pyramidalis, R.C.	
5 to 8 ins.	10.00
Thuja occ. woodwardi, R.C.	8.00

### AZALEAS

Well rooted cuttings, \$50.00 per 1000, \$6.00 per 100. Benigiri, Christmas Cheer, Coral Bells, Hexe, Hinodegiri, Ledifolia Alba, Maxwell, Salmon Beauty, Sherwood, Vesuvius and Vivid.  
\$75.00 per 1000, \$8.00 per 100 for Flame Creeper, Gumpo, Hino-crimson, Purple King, Sweetheart Supreme and Ward's Ruby.

### HEATHER

Write for complete descriptive list of more than 125 varieties of Azaleas, Conifers, Heathers, etc.

### MITSCH NURSERY

Wholesale propagators and growers of evergreen liners.  
Aurora, Oregon

### WINTER STORAGE OF B&B EVERGREENS.

Several years ago, to have evergreens for shipment in early spring, the Marshall Nurseries, Arlington, Neb., dug evergreens from the field in autumn, baling and burlapping them, and stored them over winter. The shortage of labor in subsequent years made this a desirable practice, and it has been continued on an increasing scale by that firm. The past autumn a total of 5,000 balled and burlapped evergreens was stored by the firm, half the number filling its own storage houses and the remainder being placed in buildings at the fairgrounds, which were rented over winter for the purpose. This is the first time the fairground buildings were used for the purpose, reports Vernon Marshall, and more care will be required in handling the stock in those buildings because of their lighter construction.

The autumn digging of conifers and their storage over winter in balled and burlapped form have been practiced by some firms in areas not so cold as Nebraska, but likely to be delayed in spring digging on account of wet fields.

The evergreens dug in autumn go into storage with the foliage in a bright color and come out with it in the same condition, whereas those trees standing in the field may still show the effects of winter if dug in early spring.

Prior to storing evergreens at the Marshall Nurseries, the storage floor is soaked down and shingletow is screened so that only the finest part is used for packing. The balled trees are set on two inches of wet shingletow and spaced far enough apart so that shingletow may be packed between and around each ball on all sides. The shingletow is packed over the top of the ball, but care is taken to see that it does not get into the lower foliage of the tree. The evergreens should be spaced far enough apart so that the foliage will not overlap, as this causes deterioration of the foliage where it touches.

As the storage buildings are not frostproof nor heated, there is normally some frost in the wet shingletow, but it does not penetrate more than two or three inches.

After storing evergreen trees in this manner for the past dozen years, the Marshall Nurseries find that pines, spruces and firs do not store well, but most junipers seem to come through in good shape. About half of the 5,000 plants stored this season are of Pfizer and Savin junipers. These spreading types shade the

## PATENT VARIETIES

**Top quality, No. 1 Rosebushes.**

Prices quoted are at rate of 20 per variety.

	Each		Each
80 Chatter .....	\$0.60	50 Panorama .....	\$0.75
300 Crimson Glory .....	.75	170 Pinocchio .....	.60
120 Cynthia Brooke .....	.75	30 Prima Donna .....	.75
50 Dickson's Red .....	.75	60 Sonata .....	.75
250 Fantasia .....	.75		
70 Golden Harvest .....	.75		
100 Grande Duch. Charlotte .....	.75		
50 Hector Deane .....	.65		
100 Lowell Thomas .....	.75		
70 Mark Sullivan .....	.60		
100 McGredy's Salmon .....	.65		
140 McGredy's Sunset .....	.65		
60 Mme. Henri Guillot .....	.75		
50 Nocturne .....	1.00		

**CLIMBERS**  
 450 Blaze .....
 .75 |

130 City of York .....
 .75 |

80 June Morn .....
 .75 |

130 King Midas .....
 .75 |

100 Summer Snow .....
 .75 |

A good selection of standard varieties is still available.

The roses offered here are sold under license of the patent owners.

**MAYWOOD ROSE NURSERY**

P. O. Box 5033                      Portland 13, Ore.

## California-grown Rosebushes —

*Plus Service*

We specialize in growing rosebushes for sale at wholesale in lots of 100 to 10,000. Through specialization we are able to offer the best in rosebushes and service. Your inquiry will receive our prompt attention.

**HOWARD ROSE COMPANY**

P. O. Box 725                      Hemet, California

## PACIFIC COAST NURSERY

**2244 N. Skidmore Ct.  
Portland 11, Ore.**

Pioneer seedling growers on  
the Pacific Coast since 1914.

Specializing in fruit tree seedlings.  
**Angers Rooted Quince  
Cuttings, Chinese Elm Seedlings  
and English Privet.**

We aim to please  
with quality stock.

**John Holmason & Sons, Props.**

## FOR 1949 SEASON

Fruit Trees  
Small Fruits  
Fruit Tree Seedlings  
Flowering Trees  
Shade Trees  
Shrubs  
Roses

and a general assortment of other  
nursery stock.

Ask us to put your name on our  
mailing list. (Use your letterhead.)

**RICH & SONS NURSERY**  
Hillsboro, Oregon

ground in the field so that the ground beneath continues frozen longer than that about the upright types of evergreens.

Moisture is of prime importance, and if the soil is dry at digging time in autumn, the balls are dipped in water before being stored, so that they do not dry out too much during the winter months. It is possible that in the buildings used this season at the fairgrounds it will be necessary

to apply some water, should the trees dry out more rapidly than in the firm's storage houses.

O. P. LYNUM, Poulsbo, Wash., who has been bedfast for seventeen months as the result of a stroke, is giving up his nursery business.

# ROUGH-BARK DISEASE OF PITTOSPORUM TOBIRA.

An apparently undescribed disease of *Pittosporum tobira* has been under observation and study for several years in central California at the University of California, Berkeley, and in southern California at West Los Angeles. The disease also has been noted at Albany, Riverside and Montebello and near San Jose. It seems to be more prevalent in southern than central California.

The most damaging effect of the disease is necrosis of the outer bark, which eventually loosens and sloughs off. Often the necrosis extends so deep that the branch is girdled and killed. Plants affected have only terminal clusters of a few, small, rolled leaves on the branches. Affected shrubs are smaller than normal and sometimes slowly die.

Leaf symptoms are of several types, including necrotic spots; chlorotic blotches; small, angular, yellow areas, or an oak-leaf or watermark pattern.

Although the disease is carried in cuttings from affected plants, it is not completely systemic since less than half of such cuttings under observation produced symptoms in the two years during which they were studied. The disease is not carried readily in seeds, if at all. Fifty-three seedlings from seeds of an affected plant and twenty-two from a plant without symptoms were observed for a year and did not develop symptoms.

It should be possible easily to control the disease by care in selection of cuttings, by roguing out affected plants and by growing plants from seeds, according to H. Earl Thomas and Kenneth F. Baker, division of plant pathology, University of California, Berkeley and Los Angeles.

A NEW landscaping business, Sunshine Farm Nursery, was recently opened by Charles W. Spangler, Bloomington, Ind.

MORE than 500 orchid blooms were displayed in the conservatory of the R. Lacy Nursery, Longview, Tex., March 28 to April 3, when the famous azalea gardens of the R. Lacy estate were opened to the public. Nearly 50,000 persons had visited the gardens the first two days, a record crowd in the 10-year history of this event, to see the azalea terraces and trails and flower beds arranged by Leonard Riggs, landscape architect. Specially designed for the event was a waterfall scene decorated with 3,000 square feet of multicolored flowers.

## PORTLAND WHOLESALE NURSERY CO.

306 S. E. 12th AVENUE

Avery H. Steinmetz

PORTLAND 14, OREGON

Paul E. Van Allen

Spring business has exceeded our expectations. We are enthusiastic over the prospects of even better stock and more of it for next fall.

### Quality Stock

CONIFERS AND BROAD-LEAVED  
EVERGREENS  
SHADE AND FLOWERING TREES  
FRUIT TREE SEEDLINGS  
FRUIT TREES  
DECIDUOUS SHRUBS  
VINES AND BULBS  
PORTLAND ROSES  
NURSERY SUPPLIES

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FAIRVIEW, OREGON

Wholesale Only

#### GOOD WESTERN-GROWN NURSERY STOCK

Fruit Tree Seedlings  
Flowering Ornamental Trees  
Shade Trees

Grown right and packed right.  
Combination carloads to Eastern  
distributing points will save you  
on freight.

### MILTON NURSERY CO.

MILTON Since 1878 OREGON

#### Flowering, Ornamental and Shade Trees

Oregon and Washington-grown  
Fruit Tree Seedlings

Angers Quince  
Rooted Cuttings

Our Combination Carlots to  
Eastern Distributing Points assure  
minimum transportation cost.

Use your letterhead for correspondence.

### DEL RANCHO FORTUNA

#### FRUIT TREES and GRAPEVINES

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McFARLAND, CAL.

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### F. A. DOERFLER & SONS NURSERY

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Phone: 2-1322

### ROSES—TREE ROSES

Reservations made for 1949 season.  
Good varieties—excellent quality. Write  
for list.

Pacific Northwest Rose Nursery  
P. O. Box 261 GRESHAM, ORE.

### Largest Growers of Camellias in Northern California.

Clean healthy stock, can ship everywhere, all container-grown. 1, 4 and 5-gallon cans. 4-gallon, 12-inch redwood tubs, and 14-inch redwood tubs. Send for list of over 150 varieties.

Special price on carlots, over 40,000 plants.

### LOUIS VISTICA NURSERY

R. R. 2, on U. S. 99 E.  
YUBA CITY, CALIF.



## CLASSIFIED ADS

25 cents per line.

Minimum order, \$2.00.

### AQUATICS

**WATER LILIES**—25 for \$13.00; 100 for \$25.00; 450 for \$100.00. Eight varieties, all beauties but unclassified. Write for price list. **MISSOURI WATER GARDENS**, Stover, Mo.

### AZALEAS

#### AZALEA LINERS.

We have this year what we believe to be the finest Azalea liners grown in the south. They are grown in almost pure peat moss, and have been cut back with electric clippers from three to five times. They are very bushy and have a wonderful color. During the cold weather we operated our heating plant in these beds and do not have a single plant with split bark. Our prices are the same as for regular liners, and we can furnish the following varieties:

Coral Bells	Double Mauve
Hawatha	Rex
Salmon Beauty	Sweetheart Supreme
Jersey Bells	Kaempferi
Orange Macrantha	

\$10.00 per 100, \$90.00 per 1000. 250 of a variety takes the 1000 rate. Write for our illustrated catalog.

Wholesale only.  
**BLACKWELL NURSERIES**  
Semmes, Ala.

### AZALEAS

#### LINING-OUT STOCK.

Grown in cool houses through the winter. Plants pinched back, will have 3, 4 and 5 shoots and a vigorous root system with a good ball of peat. Can be lined out directly into open ground.

<b>KAEMPFERI</b>	<b>KURUME</b>
Atlanta	Hinodogiri
Carmen	Pink Pearl
Fedora	Snow
Ledifolia alba	\$150.00 per 1000.

Now booking orders for shipment after May 1. Place your order early.  
**KOSTER NURSERY**  
Bridgeton, N. J.

We are booking orders for superior-quality, coldframe-grown Azalea liners for spring delivery at \$10.00 per 100.

<b>KURUME</b> , 4 to 6 ins.	<b>INDICA</b> , 6 to 8 ins.
Christmas Cheer	Elegans
Coral Bells	Formosa
Hinodogiri	Phoenixa
Salmon Beauty	Pride of Mobile
Salmon Queen	Salmon (Lawsal)
Snow	

Special quotation on larger quantity.  
**COTTAGE HILL NURSERY**  
T. Kiyono, Mgr.

Rt. 2, Box 67-B Mobile, Ala.

### HARDY AZALEA LINERS.

Kaempferi—Fedora, Carmen, Louise, Mme. Butterfly, Atlanta. Also, Hinodogiri, Ledifolia alba, Well branched, 6 to 8 ins., \$55.00 per 100. Grown in special mixture producing lightweight ball and large root system. Spring delivery. No packing charge. Cash with order.

### GREENSTOCK NURSERY

(Route 112, between Station and Coram)  
Port Jefferson Station, L. I., N. Y.

50,000 **AZALEA TRANSPLANTS**.  
Indica alba, Mary, Hinodogiri, Alice, Amoen, Hinomayo, Flame, Purple King, mixed pink kaempferi.

Very heavy, rooted.  
14c each in 1000 lots; 16½c each in 100 lots. Packing and shipping extra.  
**DEKALE NURSERIES, Inc.**  
Norristown, Pa.

**AZALEA TRANSPLANTS**—Hinodogiri, Coral Bells, Pink Pearl, Ledifolia alba, Sweet Briar, Sweetheart Supreme, Orange Coral Bells, Hinomayo, Triomphe, Salmon Beauty, Gardenia Supreme. Spring delivery. \$14.00 per 100, \$125.00 per 1000. **JOHN WIGMORE**, Norman Ave., Riverside Park, Riverside, N. J.

**AZALEAS**—Well rooted cuttings. See page 45. Write for list of others.  
**MITSCH NURSERY**  
Aurora, Ore.

### BERRY PLANTS

**STRAWBERRY PLANTS**—500,000 new land Gem Everbearing, \$10.00 per 1000. Brunas Marvel, \$12.50 per 1000. No. 1 fresh-dug plants grown under irrigation. Giant Newburg Raspberry plants, \$35.00 per 1000.  
**McNEAL BERRY NURSERY**  
Hamilton, Mont.

**WONDER STRAWBERRY PLANTS**—The earliest, Campbell's Early. Ripens first part of May. New. \$8.25 per 500, \$13.35 per 1000. Knopp's Special, same price. Very large. A wonder. Send for list of others.  
**WARREN SHINN'S NURSERY**, Woodbury, N. J.

### PIXWELL and SCHWAB GOOSEBERRIES.

**LATHAM and CHIEF RASPBERRIES.**  
Pixwell Gooseberries, leading variety. 2-yr. light, \$12.00 per 100. Schwab Gooseberries, new seedlings, world's largest Gooseberry, berries often 1½ ins. in diameter, highest quality, hardy, very productive. 1-yr. heavy, \$6.50 per 10; 1-yr., light, \$5.50 per 10. All Raspberries, No. 1, heavy, \$40.00 per 1000. 10 per cent discount for cash on all stock. All prices wholesale. All plants that die, replaced at ½ price.

**SCHWAB FRUIT FARM & NURSERY**  
220 N. Fifth St. Mankato, Minn.

**CULTIVATED BLUEBERRY PLANTS**—The standard varieties: Rancocas, Rubel, Jersey, Cabot. One-year, \$14.00 per 100; 2-year, \$36.00 per 100; 3-year, \$38.00 per 100. Newer varieties: Weymouth, early June; Burlington, late July; Pemberton, Atlantic, Dixie. One-year, \$35.00 per 100; 2-year, \$8.00 per dozen, \$65.00 per 100; 3-year Burlington, 18 to 24 ins., \$15.00 per dozen, 4-year Burlington, 3 feet high, \$18.00 per dozen. Weymouth and Burlington, the leaders. **WARREN SHINN'S NURSERY**, Woodbury, N. J.

**STRAWBERRY PLANTS**—Double-inspected, northern-grown Dunlap, Beaver, Blakemore, \$7.50 per 1000; 10,000 up, \$7.00 per 1000. Premier, Giant Robinson, Bellmar, \$9.00 per 1000; 10,000 up, \$8.00 per 1000. Giant Gem, Streamliner or Minnesota 1166 everbearing, \$15.00 per 1000; 10,000 up, \$15.00 per 1000. These are young, healthy, fresh-dug plants, guaranteed to reach you in good growing condition. **IOWA NURSERY**, Farmington, Iowa.

### STRAWBERRY PLANTS—(Certified).

New land-grown. Guaranteed pure. No mixed plants. Per 1000  
300,000 New Robinson ..... \$ 7.50  
500,000 Blakemore ..... 6.00  
200,000 Dunlap ..... 6.00  
100,000 Missionary ..... 5.00  
20,000 Thornless Boysenberry, No. 1 grade ..... 40.00  
Packing free. F.O.B., Stillwell, Okla.  
**IDEAL FRUIT FARM**, Stillwell, Okla.

**GEM EVERBEARING STRAWBERRY PLANTS**  
Guaranteed true to name and free of mixed varieties. Choice northern-grown, No. 1 plants. Booking orders now for spring delivery. \$10.00 per 1000. F.O.B. Prepared to fill mail orders on these and other varieties using your tags. Write for details.

**DAVIS NURSERIES**  
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**IMPROVED SENATOR DUNLAP STRAWBERRY PLANTS**. They produce large berries and we think they are the largest producers of them all. Good, strong, double, state-inspected, irrigated, fresh-dug plants, guaranteed to reach you in good growing condition. \$7.50 per 1000. Prices quoted for larger amounts.

**RILEY'S NURSERY**, Concordia, Kans.

New Willamette Raspberry	Per 100 Per 1000
plants, No. 1	\$4.50 \$35.00
New Washington Raspberry	
plants, No. 1	4.50 35.00
Rockhill Strawberry plants	47.50
Chipman Canada Red Rhubarb (heavy stock)	11.00 100.00

Carload lots on special. All plants F.O.B. Grant County Market Gardens, John Day, Ore.

**STRAWBERRY PLANTS**. Doubly inspected. Per 1000  
New Superfection Everbearing ..... \$30.00  
Streamliner Everbearing ..... 16.00  
New Arrowhead ..... 12.50  
Dunlap ..... 7.50  
500 plants at 1000 rate.  
**DOLLAR NURSERY**, Bloomfield, Iowa.

**SUPERFECTION EVERBEARING STRAWBERRY**—Foundation stock plants, direct from the originator. The true advanced strain, giving advertising advantages and prestige to users of my foundation stock plants. **FRANK J. KEPLINGER**, originator and owner of **HEART-O-MICHIGAN FARMS & NURSERIES**, Farwell, Mich.

**STRAWBERRY PLANTS**. 200,000 Robinson, northern-grown and irrigated. Spring-dug. Order now for spring delivery at \$10.00 per 1000. Also Streamliners, Everbearers, same quality, \$25.00 per 1000.

**PERCY'S STRAWBERRY NURSERIES**  
2614 Gull Rd. Kalamazoo, Mich.

**EVERBEARING STRAWBERRY PLANTS**. Wayzata, \$45.00 per 1000; Gem, \$15.00 per 1000.  
**ALLENORE NURSERY**, Excelsior, Minn.

Increase your business by offering needed stock and supplies through the Classified Ads.

### BULBS AND TUBERS

**REGAL LILIES**. Per 100  
Clean Dutch-grown stock. \$ 8.00  
6 to 7-in. bulbs ..... \$ 8.00  
7 to 8-in. bulbs ..... 10.00  
8 to 9-in. bulbs ..... 15.00  
10 or more at \$10.00 rate.  
The **WAYSIDE GARDENS CO.**, Mentor, Ohio

### SELECTED IMPORTED BEGONIAS.

Double Camellia-type; colors, white, red, yellow, copper, scarlet, orange, salmon, rose-pink.

1½ to 1½-in.	Per 100 Per 1000
1½ to 2½-in.	\$ 6.00 \$ 50.00
2 to 4-in., jumbo size	9.00 80.00
250 at 1000 rate.	13.00 110.00

Cash or C.O.D.  
**MONARCH PLANT FARMS**  
Kalamazoo 99, Mich.

### QUALITY CANNAS.

Red Humbert	Per 100
Yellow Humbert	\$4.00
President	4.00
Richard Wallace, yellow	4.00
City of Portland, orange	4.00

Cash or C.O.D.  
**MONARCH PLANT FARMS**  
Kalamazoo 99, Mich.

### SPECIAL CANNA SALE.

Good mixed Cannas of best varieties. President, Red King Humbert, Yellow King Humbert, City of Portland, Hungary, Wyoming, Pennsylvania and Eureka. \$2.50 per 100, or \$20.00 per 1000.

**THE BENTON COUNTY NURSERY CO., Inc.**  
Rogers, Arkansas

Iris, \$70.00 per 1000; fall bloomers, 15c ea.; Siberians, 10c ea. Day Lilies, 10c ea. Mixed Peonies, 20c ea. H & E Daisies, Aliums, Adenophoras, 15c ea. 100 varieties better hardy Chrysanthemums, \$7.00 per 100. Minimum 10 of a kind. Cash, net, F.O.B. Express. **HILLVIEW GARDENS**, Fort Madison, Iowa.

### LILY BULBS.

Hardy northern-grown Lily bulbs. New, rare, scarce and unusual as well as standard varieties. New wholesale list now ready. Send for your free copy.

**J. HENDRIKS**, Grower  
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**DAHLIA ROOTS**—Write today for wholesale price list N on varieties that stand hot dry weather best. **PAYNE DAHLIA FARM**, Route 5, Kansas City 3, Kansas.

### SINGLE and DOUBLE TIGER LILIES.

Also umbellatum and henryi.  
**THE EVERGREEN NURSERIES**, Lowell, Ind.

### Surplus Stock

can be easily and quickly turned into

Cash

listing it in the

American Nurseryman Classified Ads.

### CAMELLIAS

#### BIG CAMELLIA PLANTS

#### OUTSTANDING AND RARE VARIETIES.

#### WE PAY THE EXPRESS.

\*\*On Orders for 4 Or More Plants, with Safe Delivery Guaranteed to Distant U. S. Points of These "Individually Crated" Camellias GROWING IN LARGE CONTAINERS.

These are of various heights, ranging to 5½ feet—depending on the growth habits of the various varieties. These are excellent Camellias for greenhouses and can be left growing in the containers in which they are shipped. These plants are the kind that Tormey's have furnished in the past to growers who depend on us for the Top Strains of varieties. It will pay you to replace any doubtful strains with Tormey's Camellias of Merit.

**SALE PRICE**—While they last—  
\$13.75 EACH, DELIVERED\*\*

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Blood of China  
Colonel Firey  
C. N. Hastie  
Dr. W. G. Lee  
Emperor of Russia  
Firegold  
Goddess of Fire  
Gypsy  
Leona Bolen  
Marian Mitchell  
Mathotiana Rubra  
Red Finlandia  
Reticulata  
Woodville Red  
PINK CAMELLIAS  
Barbara Lodge  
Madam Hovey  
Debutante  
Ecstasy  
Eleanor Hagood  
Elegans Pink  
English Magnoliae-flora  
General Patton  
Lady Hume's Blush  
Margaret Higdon  
Marie Keating  
Madam Hovey  
Queen Beanie  
Pink Dawn  
Rev. John Drayton  
Salmon Queen

#### VARIEGATED

Admiration  
Catherine Cathcart  
Chandleri Elegans  
Cleopatra  
Dalkagura  
Donkelaari  
Finlandia Varg.  
Gigantea  
La Reine Varg.  
Margaret Calomie  
Princess Nagasaki  
Yours Truly  
WHITE CAMELLIAS  
Lotus  
Haku-Rakuten  
Mrs. Charles Simons  
Mrs. Wm. Thompson  
Paul J. Howard  
Purity

Some varieties listed are in very short supply, so please—do please—name some second choices—especially if plants with buds are of first consideration.

**TORMEY'S CAMELLIA GARDENS**  
For 15 Years—The Best from the Far West  
**TEMPLE CITY, CALIFORNIA**

## CAMELLIAS

CLASS A:		CLASS D:	
Beall Rosea		Alba Superba	
Sarah Frost		Debutante	
Sasanqua, etc.		Fimbriata	
CLASS B:		CLASS E:	
Pink Perfection		Kumasaka	
Brilliant		Laurel Leaf	
Hermes		Snowdrift	
CLASS C:		CLASS F:	
Pope Pius		Mathotiana (Purple Emperor)	
Kellingtonia		Aspicia	
Alba Plena		Rev. John Bennett	
Victor Emmanuel		Gigantea	
Lady Vanitairt		Lady Mary Cromartie	
CLASS F:		CLASS G:	
Rosea Superba		Glen 40	
La Reine Var.		Magnoliaeflora	

Per 100 Rooted cuttings 2 1/4-in. pot plants  
 Class A ..... \$10.00 \$15.00  
 Class B ..... 12.50 17.50  
 Class C ..... 17.50 22.50  
 Class D ..... 25.00 30.00  
 Class E ..... 35.00 40.00  
 Class F ..... 50.00 55.00

Our 2 1/4-in. pot Camellias we are offering this year were rooted late summer and potted in late summer and fall. Most of them do not have any top growth, but have good root system.

Write for complete list of varieties and quotations on larger quantities.

COTTAGE HILL NURSERY  
 T. Kiyono, Mgr.

R. 2, Box 67-B Mobile, Ala.

## EVERGREENS

WHOLESALE PRICE LIST, SPRING 1949.		Per 100 Per 1000	
Herberis thun. atropurpurea,			
1-yr. S., 3 to 9 ins.	\$ 3.00	\$ 20.00	
6 to 9 ins.	4.00	25.00	
Chamaecyparis pisifera aurea,			
1-yr. T., 10 to 12 ins.	15.00		
2-yr. T., 12 to 15 ins.	25.00		
Chamaecyparis plumosa,			
1-yr. T., 8 to 10 ins.	15.00	140.00	
2-yr. T., 10 to 12 ins.	25.00	240.00	
rooted cuttings, 6 to 8 ins.	10.00	90.00	
Chamaecyparis plumosa aurea,			
1-yr. T., 8 to 10 ins.	15.00		
2-yr. T., 10 to 12 ins.	25.00	240.00	
R.C., 6 to 8 ins.	10.00	90.00	
Cornus florida rubra,			
pot grafts, 10 to 15 ins.	45.00	400.00	
Ilex crenata,			
1-yr. T., 6 to 8 ins.	15.00		
2-yr. T., 8 to 10 ins.	25.00		
Pieris japonica, TT., 4 to 6 ins.	15.00		
TT., 6 to 8 ins.	20.00		
Taxus cuspidata, 1-yr. T., 6 ins.	12.00	115.00	
2-yr. T., 8 to 10 ins.	20.00		
Taxus intermedia (spreading),			
1-yr. T., 6 ins.	15.00	140.00	
2-yr. T., 8 to 10 ins.	25.00		
Taxus media hicksi,			
1-yr. T., 6 to 8 ins.	12.00	115.00	
2-yr. T., 8 to 10 ins.	20.00		
3-yr. T., 10 to 12 ins.	30.00		
1-yr. T., 2 1/4-ins. pots,			
6 to 10 ins.	20.00		
Thuja occ. compacta,			
1-yr. T., 6 to 8 ins.	12.00		
rooted cuttings, 6 to 8 ins.	10.00	90.00	
rooted cuttings, 4 to 6 ins.	8.00	75.00	
Thuja occ. boothii,			
rooted cuttings, 6 to 8 ins.	10.00	90.00	
rooted cuttings, 4 to 6 ins.	8.00	75.00	
Thuja occ. pyramidalis,			
rooted cuttings, 6 to 8 ins.	10.00	90.00	
rooted cuttings, 4 to 6 ins.	8.00	75.00	

"B" Certificate furnished. Free packing.

Cash with order. F.O.B. Nursery.

PETER BROUWER'S NURSERIES

24 Lester St. New London, Conn.

## EVERGREEN LINING-OUT STOCK

## TRANSPLANTS

Per 100 Per 1000

Colo. Blue Spruce, 4 to 8 ins. X ..... \$ 8.00 \$75.00

White Spruce, 4 to 8 ins. X ..... 8.00 75.00

Mugo Pine, 3 to 5 ins. X ..... 3.00 35.00

Can. Hemlock, 4 to 8 ins. X ..... 7.50 60.00

American Arborvitae, 10 to 15 ins. XX ..... 20.00

## SEEDLINGS

American Red Pine, 4 to 8 ins. 5.00 40.00

American Red Pine, 2 to 4 ins. 3.50 30.00

Scotch Pine, 3 to 6 ins. 3.00 25.00

Scotch Pine, 2 to 3 ins. 2.00 18.00

Mugo Pine, 3 to 6 ins. 3.00 25.00

Norway Spruce, 2 to 5 ins. 3.50 30.00

## SUNCREST EVERGREEN NURSERIES

P. O. Box 643 Johnstown, Pa.

## EVERGREEN TRANSPLANTS AND ROOTED CUTTINGS.

Per 100 Per 1000	
Hollywood, sempervirens, R.C.	\$ 5.00
Boxwood grand, R.C.	5.00 \$45.00
Arborvitae, American, R.C.	7.00
American, 4 to 6 ins. X	15.00
Elephantissima, R.C.	8.00
Tom Thumb, R.C.	7.00
Tom Thumb, 4 to 6 ins. X	15.00
Tom Thumb, golden,	
4 to 6 ins. X	15.00
Pyramidal, R.C.	8.00 75.00
Nigra, R.C.	8.00
Globe, R.C.	7.00 65.00
Globe, 4 to 6 ins. X	15.00
Juniper, Savin, R.C.	8.00
Irish, R.C.	8.00
Irish, 4 to 6 ins. X	15.00
Andorra, R.C.	8.00
Pfitzer, R.C.	10.00 95.00
Taxus hicksi, R.C.	8.00
hicksi, 4 to 6 ins. X	15.00
cuspidata, spreading, R.C.	8.00
cuspidata, upright, R.C.	8.00
English, upright,	
4 to 6 ins. X	15.00
English, spreading,	
4 to 6 ins. X	15.00
Retinospora plumosa,	
4 to 6 ins. X	15.00
plumosa, 6 to 8 ins. X	20.00
pisifera aurea, 4 to 6 ins. X	15.00
pisifera aurea, 6 to 8 ins. X	15.00
Goldust, 4 to 6 ins. X	15.00
obtusicaulis, 4 to 6 ins. X	15.00

ESHAM'S NURSERIES

Frankford, Del.

## JUNIPERS

Per 100	
ANDORRA,	
6 to 9 ins. T.	\$ 18.00
CANAERT,	
18 to 24 ins. TT, 2-yr., field-grown	150.00
DUNDEE,	
18 to 24 ins. TT, 2-yr., field-grown	150.00
HETZL,	
6 to 9 ins. T.	20.00
PFITZER,	
4 to 6 ins. T.	16.00
6 to 9 ins. T.	20.00
PFITZER, GOLDEN,	
4 to 6 ins. T.	19.00
4 to 9 ins. T.	22.00
ROBIN HOOD, new pyramidal shape,	
18 to 24 ins. TT, 2-yr., field-grown	150.00
STUHR'S SILVER, compact, slow-growing shape,	
18 to 24 ins. TT, 2-yr., field-grown	150.00
VIRGINIANA GLAUCOA,	
18 to 24 ins. TT, 2-yr., field-grown	150.00
VIRGINIANA, PLATTE RIVER,	
Twice transplanted, 2-yr., field-grown, compact salable specimens. Excellent for potting or bench balling.	
Each in lots of	100 500 1000
12 to 15 ins.	\$0.30 \$0.27 \$0.25
15 to 18 ins.	.45 .42 .40
18 to 24 ins.	.60 .58 .55
Our 2-year, twice transplanted grafts are grown in spaced nursery rows. All our linings out evergreens are dug bare root, puddled and packed in moss. Packing and boxing at cost.	

NEBRASKA NURSERIES, Inc.

4815 "O" St. Lincoln 8, Neb.

## LINING-OUT STOCK

Each per 100

AZALEAS

Amoena ..... \$0.10

Benigiri ..... .10

Gumpo ..... .15

Hinodogiri ..... .10

Ledifolia alba ..... .10

Macrantha, low ..... .10

Macrantha, tall ..... .10

Mollis, cream ..... .10

Mollis, flame ..... .17

Snow ..... .10

CAMELLIAS, 2 1/4-in. pot-grown

Cheerful ..... \$17.00

Hermes ..... 15.00

Pink Perfection ..... 17.00

## HEATHER, Transplants.

Med. hybrid, X ..... 9.00

Med. hybrid, white, X ..... 12.00

Mrs. Maxwell, X ..... 3.00

Springwood White, X ..... 9.00

Hamilton, X ..... 9.00

Carex rosea, X ..... 10.00

Carex Brilliant, X ..... 15.00

Clematis montana rubens,

## EVERGREENS—Continued

## LINING-OUT STOCK

	Per 100	Per 1000
Norway Spruce, 3-yr. S.....	\$2.50	\$20.00
White Spruce, 2-yr. S.....	2.50	20.00
Mugho Pine, 3-yr. S.....	3.50	30.00
Mugho Pine, 3-yr. T.....	5.00	45.00
Colo. Blue Spruce, 3-yr. S.....	3.00	27.50
Colo. Blue Spruce, 3-yr. T.....	4.00	35.00
Black Hills Spruce, 3-yr. S.....	3.00	27.50
Black Hills Spruce, 3-yr. T.....	4.00	35.00
Black Spruce, 3-yr. S.....	3.00	27.50
Black Spruce, 3-yr. T.....	4.00	35.00
Oriental Arb., 3-yr. T.....	2.50	20.00
4 to 8 ins.....	4.00	35.00

JOHN G. ZELENKA

R. 2, Box 293 Grand Haven, Mich.

## LINING-OUT STOCK

	Per 100	Per 1000
Taxus cuspidata, T. beds, 6 to 9 ins.....	\$15.00	
Taxus cuspidata, T. beds, 9 to 12 ins.....	20.00	
Juniper, Andorra, T.T. beds, 9 to 12 ins.....	30.00	
Juniper, Waukegan, T. beds, 6 to 9 ins.....	18.00	
Thuja woodwardi, T. beds, 6 to 9 ins.....	18.00	
Retinospora plumosa, T. beds, 9 to 12 ins.....	22.50	

## ROOTED CUTTINGS—Ready June 1

	Per 100	Per 1000
Juniperus pfitzeriana.....	\$11.00	\$95.00
Juniperus pfitzeriana aurea.....	11.00	95.00

All the above liners are nice heavy stock.

DAMASCUS NURSERIES, Damascus, Ohio

## CHRISTMAS TREE LINERS

## SEEDLINGS

	Per 1000
8000 Douglas Fir, 6 to 9 ins.....	\$40.00
15,000 White Pine, 4 to 6 ins.....	30.00
10,000 Colorado Spruce, 3 to 5 ins.....	40.00
10,000 Norway Spruce, 3 to 5 ins.....	40.00
5000 Norway Spruce, 5 to 8 ins.....	40.00

## TRANSPLANTS

	Per 100	Per 1000
4000 Colorado Spruce, 4 to 6 ins.....	50.00	
3000 Colorado Spruce, 6 to 9 ins.....	30.00	
2000 Douglas Fir, 8 to 12 ins.....	70.00	

JOHN D. NORTHRUP

R. D. 1 Conneaut, Ohio

## POTTED EVERGREENS

	Per 100	Per 1000
Biota aurea nana (Berckmans).....	\$20.00	\$160.00
Juniperus pfitzeriana.....	20.00	160.00
Pyramidalis Arborvitae.....	20.00	160.00
Taxus hickii.....	17.50	150.00
Taxus cuspidata.....	17.50	150.00
Taxus andersonii.....	17.50	150.00
Taxus hatfieldii.....	20.00	160.00

Packing and boxing at cost. Cash with order.

## VOGUE FLORAL GARDENS

New Lebanon, Ohio.

## LINING-OUT EVERGREENS

	Per 100	Per 1000
Pfitzer Juniper, rooted cuttings (available June 1).....	\$10.00	\$95.00
From 2 1/4-in. rose pots.....	20.00	175.00
4 to 6-in. transplants.....	25.00	225.00
6 to 9-in. transplants.....	30.00	275.00
9 to 12-in. transplants.....	37.50	350.00

Pyramidalis Arborvitae transplants, 12 to 15-in.....\$40.00

HENRY NURSERIES

Dept. A Henry, Ill.

## EVERGREENS, B.&amp;B.

	Each
Arborvitae, Pyramidal, 18 to 24 ins.....	\$1.65
Juniper, Irish, 18 to 24 ins.....	1.55
Juniper, Irish, 2 to 3 1/2 ft.....	2.00
Juniper, Irish, 2 1/2 to 3 ft.....	2.25
Pine, Scotch, 2 to 3 ft.....	2.00
Pine, Scotch, 4 to 5 ft.....	5.50
Pine, Austrian, 5 to 6 ft.....	9.50

4342 Branch Rd., Flint, Mich.

## TSUGA CANADENSIS

	Per 100	Per 1000
10 to 15 ins.....	\$15.00	\$120.00
15 to 18 ins, xx.....	20.00	170.00

Per 10 Per 100

15 to 18 ins, B.&amp;B. sheared.....\$ 9.50 \$ 75.00

18 to 24 ins, B.&amp;B. sheared.....14.50 125.00

LAUREL PARK NURSERIES

Box 265 Northampton, Mass.

ABELIA GRANDIFLORA

	Per 100
18 to 24 ins. bushy, bare root.....	\$30.00
2 to 3 ft. bushy, bare root.....	50.00
3 to 4 ft. bushy, bare root.....	65.00

## COMPACT SHEARED SPECIMENS:

	Per 100	Per 1000
18 to 24 ins. B.&B.....	125.00	
2 to 3 ft. B.&B.....	150.00	

CHIPOLA NURSERIES

Marianna, Fla.

## UPRIGHT YEW

Large liners from field row. Best strain grown from cuttings of selected plants. Better color superior to seedlings.

	Per 100	Per 1000
Taxus cuspidata.....	\$60.00	\$550.00
18 to 24 ins.....	70.00	650.00

BULK'S NURSERIES

Babylon, N. Y.

## RHODOENDRON PONTICUM

Strong transplants ex. flats. Will make understocks this fall. "B" certificate.

Packing free for cash with order.

KOSTER NURSERY

Bridgeton, N. J.

Spring list of Mums and fall list of Evergreen Liners on request.

McNINCH GREENHOUSES, St. Joseph, Mo.

## TAXUS ROOTED CUTTINGS

Rooted in 1948, now dormant. Cuspidata and hickii, \$11.00 per 100; \$100.00 per 1000. Hydrangea Nikko Blue, rooted cuttings, \$10.00 per 100. Cash with order.

R. D. 1 EDWARD WETZEL Madison, Ohio

## LINING-OUT STOCK

Taxus hickii and Taxus cuspidata, rooted cuttings, 1-year open frames, 9 inches. Can be shipped at once. Sample on request.

\$85.00 per 1000.

CEDARHURST NURSERIES, Inc.

3044 Pawtucket Ave. East Providence, R. I.

## DUTCH AND ENGLISH HYBRID RHODODENDRON LINERS from 2 1/2-inch rose pots.

May delivery. Ask for our list.

WRIGHT'S NURSERY

Rt. 4, Box 1046 Milwaukee 22, Ore.

## POTTED PFTZER JUNIPERS, 6 to 8 ins.

20c each; 8 to 10 ins., 25c each. Minimum order, \$10.00. Cash.

BRUENING NURSERIES

Higginville, Mo.

## 26 VARIETIES OF B&amp;B EVERGREENS

including Colorado Spruce, all sizes. Write for price list. The PEQUOT NURSERIES, Brainerd, Minn.

## EVERGREEN LINING-OUT STOCK

See our display ad on page 45.

Write for complete descriptive list.

MITSCHE NURSERY Aurora, Ore.

## FRUIT TREES

## SURPLUS LIST

4000 Apple trees, well branched, 4 to 5 ft. Each Per 1000

8000 Apple trees, well branched, 5 to 6 ft. 30 225.00

3000 Grapevines, heavy, 6 varieties.....15 100.00

Varieties of apple: Rome Beauty, Delicious, McIntosh, R. B. Davis, B. B. Davis, Stayman, Wilson Early and Yellow Transparent.

HOME NURSERY CO.

Fort Gay, W. Va.

## CHERRIES

Good height, well branched.

Montmorency, Early Richmond, English Morello.

Size Each per 100 Each

7/16-in. ....\$0.60 \$0.55 \$0.50

9/16-in. .... .70 .65 .60

1 1/16-in. .... .80 .75 .70

BENTON COUNTY NURSERY CO.

Rogers, Ark.

## HARDY NEW APRICOT

Originated at Sioux City, Ia. Hardy as other fruit trees. First plantings, now some 30 years old, still fruiting. Fruit not as large as western varieties, but quality high.

Apricot Sioux City, 3 to 4 ft.....\$0.35

Apricot Sioux City, 4 to 5 ft......45

Apricot Sioux City, 5 to 6 ft......55

MORNINGSIDE NURSERIES, Sioux City, Ia.

## MINNESOTA HARDY NEW APPLES

Prairie Spy, Minion, Victory, No. 790, Erickson and Red River Crab.

Landscape with large heavy 5 to 7-ft. trees, heavily rooted. Special prices.

Send for prices and catalog.

SWEDBERG NURSERY

Battle Lake, Minn.

We are going to have a surplus in pear, peach, plum, apricot, apple and persimmon trees and will have a few pecan trees. If interested in any of the above, we will be glad to furnish prices. Thank you.

FITZGERALD NURSERY

Stephenville, Tex.

## HARDY GRAFTED NUT TREES

Crath Carpathian English Walnut, Black Walnut, Butternut, Heartnut. Orders for less than 10 not accepted. Price list on request.

R. D. 1 BERNATH'S NURSERY

Poughkeepsie, N. Y.

## KIEFFER PEAR—2-yr. 6 to 7 ft., \$7.50

per 10, \$65.00 per 100; 4 to 6 ft., \$5.00 per 10, \$40.00 per 100. Write for prices on other Fruit Trees, Berry Plants and Ornamentals.

WAYNESBORO NURSERIES

Waynesboro, Virginia

## APPLE AND PEACH—Large assortment of varieties, various sizes and quantities. Send us your list for attractive special prices.

WAYNESBORO NURSERIES

Waynesboro, Virginia

## GROUND COVERS

MYRTLE (Vinca minor)—15 to 30 canes, clumps individually made up. Strong roots, good quality, shipped fresh. \$35.00 per 1000, \$4.00 per 100 clumps.

H. C. WAUGH

R. F. D. 2 Cheshire, Ohio

## HARDY PLANTS

HARDY CHRYSANTHEMUMS.

Rooted cuttings ready now and available through the season. A good line of varieties. Clean stock, properly packed. Our wholesale price list gladly sent upon request.

CUNNINGHAM GARDENS, Inc.

Box 37 Waldron, Ind.

## CHOICE PERENNIALS

CAMPANULA TELHAM BEAUTY. Large, single, China-blue bells. Field-grown, \$3.50 doz.; \$32.00 per 100.

HEUCHERA PINK DELIGHT. Large bright pink bells in June. Field-grown, \$3.50 doz.; \$20.00 per 100.

HEUCHERA QUEEN OF HEARTS. Best red Coralbells. May. Field-grown, \$4.00 doz.; \$25.00 per 100.

PENSTEMON ROSE ELFE. NEW! Large coral-pink in June. Hardy. Pots, \$4.00 doz.; \$25.00 per 100.

PHLOX DIVARICATA LAPHAM. Best dwarf Phlox, lilac-blue. Field-grown, \$3.50 doz.; \$20.00 per 100.

PHLOX MARY LOUISE. Largest and best pure white. Field-grown, \$3.00 doz.; \$18.00 per 100.

POLEMONIUM BLUE PEARL. NEW! Baby-blue flowers, early spring. Field-grown, \$3.50 doz.; \$20.00 per 100.

PYRETHRUM MRS. D. C. BLISS. Large, single salmon. May, June. Pots, \$3.50 doz.; \$20.00 per 100.

SHASTA DAISY EDGEBROOK GIANT. 5 to 6-in. blooms, very hardy, almost ever-blooming. Disease resistant. Pots, \$4.00 doz.; \$25.00 per 100.

SHASTA DAISY MAJESTIC. Extremely large flowers intermittently all summer. Pots, \$4.00 doz.; \$25.00 per 100.

VERONICA BLUE PETER. Deep navy-blue spikes, 18-in. stems. Field-grown, \$3.50 doz.; \$20.00 per 100.

## NEW HARDY ASTERS

PLENTY. Lovely soft blue flowers, almost as large as Frikart 3 to 4 ft.

AMELLUS SONNENWENDE. Lovely mauve flowers in June, July, 1 ft.

AMELLUS SUMMER GREETINGS. Pleasing lavender-blue flowers in June, July, 1 ft. Pot plants, \$4.00 doz.; \$25.00 per 100.

## NEW HARDY GARDEN CARNATIONS

DIANTHUS AMERICAN BEAUTY. Spicy carmine blooms from June on. Pots, \$3.50 doz.; \$20.00 per 100.

DIANTHUS DUBONNET. Double deep red flowers from June to Sept. Pots, \$4.00 doz.; \$25.00 per 100.

DIANTHUS SALMON UNIQUE. Clusters of double salmon flowers from June to Sept. Pots, \$4.00 doz.; \$25.00 per 100.

## QUALITY PLANTS—STRONG ROOTS

CORLISS BROS., Inc., NURSERIES

Reynard Street Gloucester, Mass.

## HARDY CHRYSANTHEMUMS

These are field rooted divisions and will give utmost satisfaction for potting for spring resale or lining out.

## CUSHION TYPES

Per 100

\*Bronze Cushion.....\$4.00

\*Pink Cushion.....4.00

\*White Cushion.....4.00

\*Santa Claus, bright red.....4.00

Yellow Cushion.....6.00

## TALLER, CUT FLOWER TYPES

\*Acacia, single, yellow, profuse.....4.00

\*Algonquin, double, yellow.....4.00

\*Autumn Lights, new bronze.....4.00

\*Clara Curtis, new pink Korean.....4.00

\*Caliph, double, red.....4.00

\*Burgundy, new crimson.....4.00

\*Dean Kay, early, pink.....4.00

\*Deanna, rose-pink.....4.00

\*Ember, glowing orange.....4.00

\*Hebe, early, pink Korean.....4.00

\*Irene, white pompon.....4.00

\*Red Kristina, large Korean.....4.00

\*Little Bob, bronze pompon.....4.00

\*Mrs. Morgan, double, chestnut.....4.00

\*Lavender Lady.....6.00

\*Ouray, bronze pompon.....4.00

\*Pygmy Gold, yellow pompon.....4.00

\*Mrs. Du Pont.....4.00

\*Reveler, India-red, Eng.....4.00

\*Seminole, early, white.....4.00

All plants above, starred varieties only. Field clumps, \$2.00 per 10; \$15.00 per 100.

## NEW CUSHION MUMS

Achievement, apricot tins, field div.....6.00

Champion Cushion, red-bronze, field div.....6.00

Major Cushion, bright pink, field div.....6.00

Yellow Supreme, early, yellow, field div.....6.00

25 of a variety at 100 rate.

Minimum field divisions, 25 of a variety.

ELKHART NURSERY CO.

Elkhart 1, Ind.

## STRONG ONE-YEAR-OLD HARDY PHLOX

Because we are already sold out on several varieties of Phlox and unwilling to provide our customers with delays, substitutes or disappointments, we plan on giving the small buyer the benefit of our new plan.

We still have at least 30 varieties on hand, some of them the best obtainable, each variety carefully wrapped and labeled, 10 plants each of 8 named varieties (our selection) at \$5.50, 10 plants each of 10 named varieties (our selection) at \$10.00. Terms: Cash with order. Shipment when desired.

KNOLL &amp; WALTERS PERENNIAL FARM

Route 2 Zeeland, Mich.

## TWO HARDY PERENNIALS

Iris kaempferi, mixed colors.....\$15.00

Hemerocallis kwanoo flore-plena.....12.00

Blooming-size plants, J. H. certified. Free packing. Cash with order.

## BROOKFIELD GARDENS

Route 6 Delaware, N. J.



## WELLER'S BETTER PHLOX.

Strong 1-year, with all roots.	
5 or more of a variety at per 10 rate.	
25 or more of a variety at per 100 rate.	
	Per 10 Per 100
B. Comte, purple.....	\$1.75 \$12.00
Border Gem, reddish-purple.....	2.00 15.00
Brilliant, scarlet.....	2.00 15.00
Champs Elysees, dark purple.....	1.75 12.00
Etna, deep scarlet.....	2.00 15.00
Flancee, pure white.....	2.00 15.00
Firebrand, orange-scarlet.....	2.00 15.00
Flash, crimson-red.....	2.00 15.00
Frau A. Buchner, pure white.....	1.75 12.00
Hauptmann Kohl, blood-red.....	2.00 15.00
H. B. May, bright pink.....	2.00 15.00
Leo Schlageter, scarlet.....	2.00 15.00
Mrs. Jenkins, white.....	1.75 12.00
Mrs. R. P. Struthers, orange.....	1.75 12.00
Newbud, red.....	2.00 15.00
Nordlicht, mauve-carmine.....	2.00 15.00
P. D. Williams, appleblossom.....	2.00 15.00
Prime Minister, white, red eye.....	1.75 12.00
Purple Sweetheart, purple.....	2.50 20.00
Rheinlander, salmon-pink.....	1.75 12.00
Salmon Glow, deep salmon.....	2.00 15.00
Silvertone, fine lilac.....	2.00 15.00
Sir Edwin Landseer, crimson.....	1.75 12.00
Special French, soft salmon.....	2.00 15.00
Wm. Hochberg, black-red.....	2.00 15.00
Wm. Kesseling, violet.....	2.00 15.00

F.O.B. Holland; packing at cost.  
3 per cent for cash, without packing cost.

Ask for our Perennial Catalog.  
WELLER NURSERIES CO., Inc.  
Holland, Mich.

Alyssum saxatile compactum.....	Per 100
2-yr. seedlings.....	\$ 3.00
2-yr. plants, heavy.....	8.00
Aquilegia.....	
Silver Queen, heavy.....	12.00
Crimson Star, heavy.....	12.00
Mrs. Scott Elliott, heavy.....	10.00
Campanula punctata.....	10.00
Chrysanthemum September Jewels.....	
heavy.....	12.00
Morning Primrose.....	8.00
Phlox.....	
Marconi, dwarf rose, extra-large.....	15.00
Brilliant, heavy.....	10.00
Lyssoglossa rosea.....	8.00
Platyodon.....	
blue and white, extra-heavy.....	\$2.00
Pyrethrum, Robinson's giant, extra-heavy.....	2.00
Baptisia australis, extra-heavy.....	2.00
Anemone tabernaemontana, extra-heavy.....	2.00
Astilbe rosea.....	2.00

J. J. NIGARD NURSERY  
Herbst, Wis.

## HARDY PERENNIALS.

These are field plants, not small seedlings.	
	Per 100
Aquilegia, Scott Elliott's.....	\$15.00
Artemisia Silver King.....	15.00
Carnation Grenadin, White, Yellow, Pink, Red.....	12.00
Daisy, Mt. Shasta, strong div.....	12.00
Daisy, White Swan, strong div.....	5.00
Delphinium, Pacific, mixed.....	20.00
Dianthus plumarius.....	12.00
Funkia lancifolia.....	15.00
Gypsophila paniculata.....	12.00
Gypsophila repens, Bodgeri.....	15.00
Primula varie colones.....	15.00
Veronica long, subsessile.....	20.00

Write for quantity prices.  
We specialize in hardy mums. Write for list.  
ELKHART NURSERY CO.  
R. R. 5 Elkhart 1, Ind.

## "CUTIE"

OUR NEW HARDY MUM FOR '49.  
Tiny cherry-red, button-type flowers, covering sturdy compact, 15-in. plant. Unusual blending of durable flowers and lasting foliage long after frost and light freezing. No reservation on propagation rights. 3 original field clumps, having 200 root runners, \$5.00. Rooted cuttings, \$2.00 per 2; \$5.00 per 15; \$7.50 per 25; \$20.00 per 100.

PRAIRIE SOUTHWEST FLORETUM  
R. F. D. 1, Box 103 Fall River, Kan.

## LIRIOPE.

But few plants will grow equally well in sun or shade, hot or cold, wet or dry. Liriope measures up to this. We have a nice stock of this great border plant to offer at the following attractive price. Nice field divisions ready now.

Liriope muscari exiliflora, \$5.00 per 100.  
RIEGLER PLANT CO.  
Experiment, Ga.

NEK MUMS—Uni. of Minn. Varieties.  
Dr. L. E. Longley—double, pink, early, very floriferous.

Moonlight—double, white, light yellow center.  
Silver Pink (1947)—double, pink with silver sheen.

Rooted cuttings, 6 for \$1.00. Potted plants, each 25c. By mail, postage extra. Min. order, \$2.00.

PERKINS BROS. St. Paul 9, Minn.

## DOUBLE GYPSOPHILA.

Nice field-grown plants. Per doz. Per 100  
Bristol Fairy.....\$6.00 \$35.00  
Paniculata Fl. Pl.....6.50 40.00  
25 or more of one kind at 100 rate.  
THE WAYSIDE GARDENS CO., Mentor, Ohio

HARDY PERENNIALS. We are growers of both seeds and plants of hardy perennials in large assortment, many hundreds of kinds. Ask for Special Wholesale Price List.  
REX. D. FEARCE, Dept. N, Moorestown, N. J.

## BLEEDING HEARTS.

Dicentra spectabilis, 3 to 5 ins.....	Per 100
Dicentra spectabilis, 5 to 8 ins.....	\$30.00
and up.....	40.00
Dicentra eximia, 3 to 5 ins.....	15.00
Dicentra eximia, 5 to 8 ins. and up.....	20.00
J. HENDRIKS, Grower	
Box 27 Portage, Mich.	

A NEW CATALOG!!  
Just off the presses, the top assortment of perennials prepared for the trade exclusively—we do not retail. There are no seedlings. liners or silver-cut divisions considered—all plants are at full maturity for immediate display. May we send you a copy?  
THE JOSEPH F. MARTIN CO., Inc.  
Painesville, Ohio

HARDY PERENNIALS—Strong 2-year, field-grown. Early spring delivery Per 100  
Hardy Phlox Mary Louise, pure white.....\$18.00  
Hardy Phlox E. I. Farrington.....12.00  
Platyodon mariesii, blue.....12.00  
Lychnia viscaria florepleno.....15.00

## PLANE VIEW NURSERY

West Main Rd. Middletown, R. I.

HARDY PHLOX LINERS.  
Planted out during April or May, the young plants offered in our wholesale list should bloom and make fully developed plants this year. Also, you will find other popular perennials offered in our list, which is free upon request.

CUNNINGHAM GARDENS, Inc.  
Box 37 Waldron, Ind.

## GERBERAS.

The Hersey Improved Duplex Gerberas now available to all. This is the choice, florists' cut flower so much in demand. Strong healthy 1-year plants from the field, priced at \$17.00 per 100. Delivery through June.

L. E. COOKE CO.  
112 Vista St. San Gabriel, Calif.

## DAISIES.

Marconi and Esther Read, \$8.00 per 100, \$75.00 per 1000. Shipment through April, when they are at their best. Better, stronger plants (all weaklings discarded). You receive only the BEST.

L. E. COOKE CO.  
112 Vista St. San Gabriel, Calif.

## GYPSOPHILA BRISTOL FAIRY.

Strong, grafted pot plants

	Per	Per	Per
	doz.	100	1000
2 1/4-in. pots.....	\$3.00	\$20.00	\$150.00
25 at the 100 rate. 250 at the 1000 rate.			

BLUE ACRE GARDENS  
R. R. 2, Box 162 Piqua, Ohio

## PHLOX.

Have you seen our list of varieties still available in the April 1 issue? These Phlox are one year old, but all have been in bloom and have been carefully watched for any mixing.

HENRY LE POIRE  
Route 2 Zeeland, Mich.

## PERENNIALS.

New and Standard Kinds.

A most modern and complete selection.

New Wholesale List now ready.

Send for your Free Copy Now.

CARROLL GARDENS  
Box 15 Westminster, Md.

## HARDY ASTERS—Field-grown divisions

for spring delivery. Fresh dug when weather permits. Harrington's Pink and Violeta, purple, \$10.00 per 100. Cash, please.

PAYNE DAHLIA FARM  
Route 5 Kansas City 3, Kansas

## BLEEDING HEARTS.

Dicentra spectabilis, 3 to 5 eyes.....\$0.30

Dicentra spectabilis, 5 to 8 eyes......40

Well developed, field-grown roots.

CASHAR W. EVANS, Selbyville, Del.

## HARDY PHLOXES.

See the March 1 issue of the American Nurserymen for list of Hardy Phloxes.

RICHARDS GARDENS  
Plainwell, Mich.

## HARDY FERNS—\$7.00 per 100.

Ostrich, Clayton, Lady and Maidenhair.

ELEGANS LILY, xx 15c; medium, 10c.

STRAND NURSERY CO.  
Taylors Falls, Minn.

## HARDY CHRYSANTHEMUMS.

Send for our list of the best varieties for garden and cut flowers.

FRENCH CREEK NURSERIES  
35785 Detroit Rd. Avon, Ohio

America's Best Source for Hardy Plants is

THE WAYSIDE GARDENS  
Mentor, Ohio

Write for Trade List.

## LIATRIS.

Liatris pycnostachya, field divisions.

\$5.00 per 100; \$25.00 per 1000.

REINHOLD'S FLOWERS Flat Rock, Mich.

Pansies, perennials and rock plants in wide variety. Send for catalog.

PITZONKA'S PANSY FARM  
Bristol, Pa.

Spring list of Mums and fall list of Evergreen Liners on request.

MCININCH GREENHOUSES, St. Joseph, Mo.

## BLEEDING HEARTS.

Dicentra spectabilis, 3 to 5 eyes.....	Each
Dicentra spectabilis, 5 to 8 eyes.....	\$0.30
Large healthy roots, packed as dug.	.40
CHARLES W. BROWN	Berlin, Md.

## HARDY PLANTS.

See the March 1 issue of the American Nurserymen for list of Hardy Plants.  
RICHARDS GARDENS  
Plainwell, Mich.

## HARDY CHRYSANTHEMUMS.

Send for our 1949 price list.  
Cultural notes on cut flowers and pot plants.  
C. C. BREECE  
Delaware, Ohio

## ROSEBUSHES

## HYBRID TEA ROSES, NO. 1 GRADE.

	Doz.	100
Anzac (Pat. No. 636), coral and gold.....	\$ 9.50	\$ 70.00
Apricot Queen (Pat. No. 464), apricot.....	9.50	70.00
Butterscotch (Pat. No. 613), capucine-buff.....	11.00	75.00
California (Pat. No. 449), ruddy-orange.....	9.50	70.00
California Centennial (Pat. Rights Reserved), most brilliant crimson.....	13.00	100.00
Commando (Pat. No. 702), salmon-pink.....	9.50	70.00
Contrast, exquisite bicolor.....	8.50	65.00
Countess Vandal (Pat. No. 38), pink.....	11.00	75.00
Douglas MacArthur (Pat. No. 581), pink.....	11.00	75.00
Duquesa de Penaranda, coppery-apricot.....	8.50	65.00
Edith Nellie Perkins, pink.....	8.50	65.00
Edith Willkie (Pat. No. 500), pink.....	11.00	75.00
Grande Duchesse Charlotte (Pat. No. 774), dusky coral-red.....	11.00	75.00
Heart's Desire (Pat. No. 507), deep red.....	11.00	75.00
Hill Top (Pat. No. 528), capucine-buff.....	11.00	75.00
Major Shelley (Pat. No. 447), scarlet.....	9.50	70.00
Mme. Chiang Kai-shek (Pat. No. 664), clear yellow.....	11.00	75.00
Mme. Cochet-Cochet (Pat. No. 129), coppery-pink.....	9.50	70.00
Mrs. E. P. Thom., bright canary-yellow.....	8.50	65.00
Nocturne (Pat. No. 713), dark red.....	13.00	100.00
Pearl Harbor (Pat. No. 637), shell-pink.....	9.50	70.00
Phyllis Gold, deep yellow.....	8.50	65.00
Pink Dawn, lovely pink.....	8.50	65.00
President Macia, clear pink.....	8.50	65.00
Radiance, brilliant carmine-pink.....	8.50	65.00
Red Radiance, bright cerise-red.....	8.50	65.00
San Fernando (Pat. App. For), scarlet.....	13.00	100.00
Santa Anita (Pat. No. 539), pink.....	8.50	65.00
Shangri-La (Pat. No. 665), pink.....	11.00	75.00
Sterling (Pat. No. 21), flaming pink.....	11.00	75.00
Tallman, scarlet-orange and yellow.....	8.50	65.00
Tallyho (Pat. App. For), rose bicolor.....	18.00	
Will Rogers (Pat. No. 256), crimson-maroon.....	8.50	65.00
FLORIBUNDA ROSES, NO. 1 GRADE.		
Improved Lafayette, deep glowing red.....	8.50	65.00
Sparkler, deep crimson.....	8.50	65.00
SINGLE HYBRID TEA ROSES, NO. 1 GRADE.		
Dainty Bess, shell-pink.....	8.50	65.00
White Wings (Pat. App. For), clear white.....	11.00	75.00
HYBRID PERPETUAL, NO. 1 GRADE.		
Arrillaga, largest pink.....	8.50	65.00
Frau Karl Druschki, pure white.....	8.50	65.00
George Arends, pink form of the preceding.....	8.50	65.00
Mount Everest, crystalline-white.....	8.50	65.00
Mrs. W. C. Miller, pink.....	8.50	65.00
SHRUB ROSES, NO. 1 GRADE.		
Lipstick, cerise-shaded salmon.....	8.50	65.00
Ming Toy (Pat. App. For), brilliant rose.....	8.50	70.00
CLIMBING ROSES, NO. 1 GRADE.		
Meda (Pat. No. 518), shrimp-pink.....	13.00	100.00
Thor (Pat. No. 387), large scarlet-red.....	15.00	125.00
THE WAYSIDE GARDENS CO. Mentor, Ohio		

## NORTHERN OHIO ROSES.

Hybrid Tea, Polyanthas and Climbers.

Write for our list.

LESTER F. SQUARE NURSERIES  
Fairport-Nursery Rd.  
Painesville, Ohio

OREGON ROSES, 2-year, field-grown on multistraps, in all the most popular standard sellers. Graded right and green to the tops. We stock light but right, without cost. Send for list.

MT. HOOD NURSERY Gresham, Ore.

See our display advertisement of rosebushes on page 37 in this issue.

OKAZAKI PLANT FARMS, Inc.  
P. O. Box 572 Springfield, Mo.

Forms for classified ads close

Monday—two weeks before date of issue.

Don't miss an issue by sending copy late!

## SEEDS

## SAXIFRAGA SEEDS.

*Caespitosa*, 12 in. Hy. Purple Robe, 8 in. Cotyledon, 18 in.; *Decipiens Grandif.*, 12 in. Tr. Pkt., 50c; 1/32 oz., \$1.25; 1/16 oz., \$2.25

## SEDUM SEEDS.

*Acre*, 2 1/2 in.; *Alcock*, 5 in.; *Selakianum*, 6 in.; *Album*, 6 in.; *Spurium*, 8 in.; *Coccineum*, 6 in. Tr. Pkt., 50c; 1/32 oz., \$1.25; 1/16 oz., \$2.25

## SEMPERVIVUM SEEDS.

*Perennial Species Mixed*, Tr. Pkt., 50c; 1/32 oz., \$1.50

## GERMANIA SEED CO.

6332 N. California Ave. Chicago 45, Ill.

## SEEDS.

## Taxus Cupidata.

We offer new crop direct from Japan. Let us know the quantity you require.

## AMERICAN BULB CO.

1335 W. Randolph St.

Chicago 7, Illinois

## OSAGE ORANGE SEEDS.

*Maclura aurantiaca*, or *pomifera*, Bois d'Arc. Clean, new crop seeds.

## RAY WICKLIFFE

Seneca, Kan.

## SHRUBS AND TREES

Wentzell's Nursery is the place for down-to-earth bargains for the man who can visit us and haul away his own trees. Willows, shade trees, blue spruce, fruit trees, purple-leaved plums, hundreds of red-flowering peaches (7 to 8 ft.), pink dogwood, pink almond, azaleas, mt. pinks, rhododendrons, blueberries, Eldorado blackberries and many others.

The beauty of these trees is that they are all balled and burlapped, fresh dug and have not been in storage all winter.

We have no price lists to mail out.

## Open Sundays.

## WENTZELL'S NURSERIES

Cattell Rd., Westview, N. J., on Rt. 47. Turn right on Cattell Rd. and go one mile.

Ginkgo biloba, liners Per 100 Per 1000

4000 2 to 4 ins. \$3.00 \$25.00

2000 4 to 6 ins. 4.00 35.00

Calif. Privet (Ligustrum ovalifolium)

5000 6 to 12 ins., 2 canes or more 20.00

5000 12 to 18 ins., canes or more 30.00

18 to 24 ins., 2 canes or more 40.00

Berberis thunbergii (Green-leaved

Barberry)

5000 liners, 9 to 12 ins. 20.00

12 to 18 ins. 30.00

5000 2-yr. branched, 9 to 12 ins. 30.00

12 to 18 ins. 35.00

10 per cent on large orders.

Cash, please; packing extra.

EDMOND L. BABCOCK'S NURSERY

32 West Ave. Danville, N. Y.

MIMOSA TREE—*Albizia julibrissin*.

## New low prices.

This small, rapid-growing tree with fine feathery foliage and showy, light pink flowers in early spring is one of our most valuable trees. Not particular as to soils. A great landscaper's tree. We offer nice healthy stock.

Per 100 Per 1000

4 to 8 ins. \$4.00 \$20.00

10 to 20 ins. 6.00 35.00

24 to 30 ins. 10.00 50.00

Send for our new list.

## RIEGLER PLANT CO.

Experiment, Ga.

## HIBISCUS (Mallow).

Henderson's Giant Hybrid. These new hybrids can be grown anywhere. Absolutely hardy. The flowers are enormous in size, measuring 6 to 12 ins. across. The colors are gorgeous and striking. Are grand for specimen plants on lawns; also in parks. These giant Hibiscus, with their gorgeous colors, are attracting much attention throughout the nation. Mixed colors. Blooming-size stock.

\$4.00 per doz.; \$30.00 per 100; \$150.00 per 1000.

## RIEGLER PLANT CO.

Experiment, Ga.

## LINING-OUT STOCK.

Per 100

Red Cedar, Platte River, 6 to 8 ins. \$10.00

1 1/4-in. pots \$50.00

Snowball, Common, from 1 1/4-in. pots. 10.00

Heckroth Honey suckle, from 1 1/4-in. pots. 12.00

Euonymus coloratus, from 1 1/4-in. pots. 8.00

Euonymus carrierei, from 1 1/4-in. pots. 8.00

Euonymus radicans, from 1 1/4-in. pots. 8.00

Euonymus coloratus, 1-yr. transplants. 10.00

Euonymus carrierei, 1-yr. transplants. 10.00

Euonymus radicans, 1-yr. transplants. 10.00

Prepaid for cash with order.

## PRITCHARD NURSERIES

Ottawa, Kan.

Route 4

## 3,000 TRANSPANTED CHINESE CHESTNUT.

Per 100

8 to 12 ins. \$50.00

12 to 18 ins. 60.00

18 to 24 ins. 70.00

24 to 30 ins. 80.00

30 to 36 ins. 90.00

Fruiting size, bore nuts last year, \$2.00 each, in lots of 10 trees.

## HOME NURSERY CO.

Fort Gay, W. Va.

*Azalea ledifolia alba*, 4 to 8 ins., 15c. *Pieris japonica*, 8 to 12 ins., XX, 50c. *Leucothoe*, 3 to 6 ins., X, 10c. *Buxus japonica*, 4 to 8 ins., X, 7 1/2c. *Ilex crenata*, 4 to 6 ins., X, 10c; 6 to 8 ins., X, 15c. *Ilex bullata*, 6 to 8 ins., XX, 20c. *Callicarpa japonica*, 8 to 12 ins., X, 5c. *Euonymus yedoensis*, 1-yr., \$2.00 per 100. Mixed Kurume Azaleas, 3 to 6 ins., X, 15c. Golden Privet, 8 to 12 ins., X, 5c. *Viburnum opulus sterile*, 8 to 12 ins., X, 6c. *Baltic Ivy*, 6 to 9 ins., 6c. *Pachysandra*, 2-yr., 5c. *Baltic Ivy*, 2-yr., 6c.

## ALANWOLD NURSERY

Neshaminy, Bucks Co., Pa.

## SURPLUS NURSERY MATERIAL.

Prices furnished on application.

500 Norway Maples, 5 to 6-in. cal. (Planted 8x8 ft.)

200 Taxus intermedia, 6 to 8 ft.

200 Taxus nana, 4 to 8 ft.

50 Malus in variety, 10 to 14 ft.

50 Quercus palustris, 4 to 7-in. cal.

20 Umbrella pine, 8 to 10 ft.

50 Taxus capitata, 8 to 10 ft.

150 Thuja spiralis, 6 to 10 ft.

## SWAN RIVER NURSERY

Patchogue, L. I., N. Y.

## TEXAS UMBRELLA TREE.

*Melia azedarach umbraulifolmis*.

New low prices. This most beautiful and valuable tree is noted for its quick growth and shapely appearance. Needs no pruning or shaping. Always in demand. An ideal landscaper's small tree.

Per 100 Per 1000

15 to 18 ins. \$6.00 \$25.00

20 to 30 ins. 8.00 35.00

## RIEGLER PLANT CO.

Experiment, Ga.

Per 1000

Canadian hemlock transplants

4 to 8 ins. \$75.00

6 to 8 ins. TT 125.00

9 to 12 ins. TT 200.00

Red-leaved Barberry

9 to 12 ins., br., 2-yr. 40.00

12 to 18 ins., br., 2-yr. 60.00

15 to 18 ins., br., 2-yr. 70.00

Green-leaved Barberry 25% less

Packing free for cash with order.

TWIN CEDAR NURSERY

Williamsburg, Mass.

## SURPLUS LIST.

Per 1000

Berberis thunbergii

2-yr. adigs., 9 to 12 ins. \$20.00

2-yr. adigs., 12 to 18 ins. 35.00

2-yr. adigs., 18 to 24 ins. 50.00

Berberis thunbergii atropurpurea

9 to 12 ins. 55.00

12 to 18 ins. 65.00

15 to 24 ins. 85.00

## HOME NURSERY CO.

Fort Gay, W. Va.

## ACER PALMATUM ATRO. SEEDLINGS.

Spring delivery Per 100 Per 1000

8 to 12 ins. \$10.00 \$90.00

6 to 8 ins. 6.00 50.00

3 to 5 ins. 3.00 40.00

1 to 3 ins. 1.50 30.00

## ELWOOD HUBBS

Palmyra, N. J.

## BERBERIS THUNBERGII LINERS.

Per 100

2 yrs., br., 12 ins. \$3.00

2 yrs., br., 15 ins. and up. 5.00

1-yr. adigs., 6 ins. 1.50

1-yr. adigs., 9 ins. 2.50

## DE WINTER'S NURSERY

Route 1 Grandville, Mich.

## CHINESE ELM

Per 100 Per 1000

3 to 4 ft. \$5.50 \$45.00

2 to 3 ft. 3.00 25.00

18 to 24 ins. 2.50 20.00

12 to 18 ins. 1.75 15.00

6 to 12 ins. 1.20 10.00

## CLINTON NURSERIES &amp; GREENHOUSES

Clinton, Okla.

## ACER PALMATUM ATRO. SEEDLINGS.

Spring delivery Per 100 Per 1000

8 to 12 ins. \$10.00 \$90.00

6 to 8 ins. 6.00 50.00

3 to 5 ins. 3.00 40.00

1 to 3 ins. 1.50 30.00

## ELWOOD HUBBS

Palmyra, N. J.

## PRIVET.

We have a fine lot of extra-heavy California Privet, 3 to 4-ft. grade.

Wholesale only.

CHARLES MOMM & SONS, Inc.

1417 Stuyvesant Ave. Union, N. J.

500 Lombardy poplar, 6 to 8 ft. \$30.30

200 Lombardy poplar, 8 to 10 ft. 20.00

Minimum order, 25 trees. Packing free.

F.O.B. here, cash or C.O.D.

IDEAL FRUIT FARM Stillwell, Okla.

## WHITE BIRCH SEEDLINGS.

Each

3000 left, 2 to 3 ft. \$0.12

2500 left, 3 1/4 to 4 ft. .15

## PRESCOTT'S NURSERIES

Marengo, Ill.

## Surplus Stock

can be easily and quickly turned into

Cash

Listing it in the

American Nurseryman Classified Ads.

## VEGETABLE PLANTS

## WHOLESALE PRICE LIST, 1949.

## VEGETABLE PLANTS.

Plant Variety	Date Ready	Per 1000
Cabbage	Now	\$1.25
Collard	Now	1.25
Onion	Now	1.00
Lettuce	Now	2.50
Broccoli	Now	2.00
Cauliflower	Now	7.50
Pepper	Now	2.50
Eggplant	Now	2.50
Sweet Potato	Now	2.50
Tomato	Now	3.00

All above prices F.O.B. Albany. Leading varieties. Write for catalog. Large, fresh plants. Prompt shipment.

Write or wire.

## PIEDMONT PLANT CO.

Box 946 Albany, Ga.

## VEGETABLE ROOTS

## MARY WASHINGTON ASPARAGUS

ROOTS—Jersey-grown, home of asparagus.

One-year, \$12.00 per 1000; 2-year, \$15.00 per 1000; 3-year, \$18.00 per 1000. Extra-fine roots.

Also rhubarb and horse-radish roots. WAR-

REN SHINN'S NURSERY, Woodbury, N. J.

## MISCELLANEOUS

## SURPLUS LIST.

Mixed Cannas, strong, open-grown bulbs,

2 to 5 eyes, \$20.00 per 1000.

Latham Raspberries, No. 1, heavy, \$40.00

per 1000.

Golden Weeping Willow, 6 to 8 ins., \$100.00

per 100.

The CHALIN LEWIS NURSERY

Piggott, Arkansas

25,000 Hardy Shrubs, 50,000 Amur River

North Privet, 100,000 8-in. cuttings, \$2.50 per

1000; Kentucky coffee beans, 50c per lb.;

Sycamore (Platanus), 45c; Allanthus, 75c;

Catalpa, 85c.

## SCHROEDER NURSERY CO.

Granite City, Ill.

## SUPPLIES

## MICHIGAN PEAT.

"HIGH NITROGEN-QUALITY PEAT"

gives results you can't beat. For 30 years,

the trade's favorite. Excellent for every

growing need. Unsurpassed for lawns. Weed

free, pH4, bacterially active. Fine, medium

and coarse grinds. MICHIGAN Peat is your

best "buy."

2 to 19 (4-bu. bags) \$1.65 each

20 to 200 (4-bu. bags) 1.60 each

4-bushel bag weighs about 100 lbs.

F.O.B. PEAT BOGS, CAPAC, MICH.

Also packed in 35-lb., 60-lb. large chem-

ically treated rotproof bags for resale profits. LOW

price cars, truckloads, bulk and bagged.

KOSTER NURSERY tests prove M.P. does a

better job at less cost—write for copy. WHY

## DAHLIA OR TREE LABELS.

	Priced per 1000	
3/4x1/2 ins., notched, not wired.	\$2.50	plain
3/4x1/2 ins., wired	\$3.00	printed

## POT LABELS.

4x1/2 ins. (cartons 1000 each)...	2.50	3.00
5x1/2 ins. (cartons 1000 each)...	2.75	3.30
6x1/2 ins. (cartons 1000 each)...	3.25	3.75

8x1/2 ins. (cartons 500 each)...	2.50	3.00
10x1/2 ins. (cartons 500 each)...	3.00	3.60

## GARDEN STAKES.

	Priced per carton.	
8x 1/2 ins. (cartons 250 each)...	2.00	2.25
10x 1/2 ins. (cartons 250 each)...	2.25	2.50
12x1 1/2 ins. (cartons 100 each)...	1.25	1.50

Our labels are perfectly white and smooth on both sides and are pronounced by growers the best and most economical.

YOHO & HOOKER Youngstown 2, Ohio

## NEW NEW NEW

NEW ERA PEAT HUMUS a rich, highly organic combination of Peat and Humus; pH 4.9 to 5.6, packaged for the first time in Plastic Bags. Unsurpassed for reselling. Comes in the following sizes: 1, 3, 10, 50-lb. bags. We guarantee these bags to last indefinitely. NEW ERA PEAT HUMUS is moisture-sealed with the original goodness sealed in—easy to sell—clean to handle—nationally advertised. Also packaging NEW ERA POTTING SOIL in the same manner as NEW ERA PEAT HUMUS. Special Trial Offer—5 50-lb. bags, \$6.00, or write for further information, prices and sales aids to:

NEW ERA PRODUCTS, Dept. B  
Clinton Nurseries Clinton, Conn.

## PLANT BOXES

KNOCK-DOWN PLANT BOXES.  
Ends of good grade southern Yellow Pine, sides and bottoms of one piece 1/2-in. Masonite.  
Standard specification, inside measurements.  
12x15x5 ..... \$12.00 per 100  
15x15x5 ..... 15.00 per 100  
All other sizes quoted on request. Prices F.O.B. Birmingham. Prompt shipment, any quantity. Attach check to order.  
We make mixed shipments of flats, plant boxes and spray boards.  
HIGHTOWER BOX & TANK CO.  
Birmingham, Ala.

## IMPORTED CHINESE TONKIN CANES.

Strong—smooth—long-lasting.  
The best Bamboo plant stake.  
Contents Price  
per bale per bale  
4 ft., 1/2 to 3/4-in. diam. .... 250 \$19.50  
5 ft., 1/2 to 3/4-in. diam. .... 250 14.75  
6 ft., 1/2 to 3/4-in. diam. .... 200 13.50  
7 ft., 1/2 to 3/4-in. diam. .... 150 15.25  
8 ft., 1/2 to 3/4-in. diam. .... 100 13.00  
Bale lots only. Quantity discounts: 10 bales up less 5 per cent, 25 bales up less 7 1/2 per cent.  
McHUTCHISON & CO.  
36 Chambers St. New York 7, N. Y.

MINNESOTA SPHAGNUM MOSS.  
Arrowhead Lake region sphagnum moss, high-quality, long-fibered. Burlap bales, L.C.L., \$1.25 per bale; carload, \$1.15 per bale. Wire-bound wood bales, carload, \$1.10 per bale. Bulk sphagnum moss, \$4.00 per yd. in 100-yd. carload lots. All orders F.O.B. Floodwood, Minn.

HORTICULTURAL PEAT.  
High-quality peat of far north. Full bales, approx. 125 lbs. each, \$2.50 per bale. 3-bushel burlap bags, \$1.00 per bag. All orders F.O.B. Floodwood, Minn.  
ARROWHEAD PEAT CO. Floodwood, Minn.

TIDEWATER RED CYPRESS FLATS.  
We manufacture our own flats and ship the same day.  
Size 20x15x3 ins. inside measure, 42c each. The sides and bottoms full 1/2 in. thick, the ends are 3/4 in. thick. Accurately fitted and knocked down, 10 complete flats to a bundle. Genuine dense virgin Cypress, the kind that lasts and lasts.  
"Just a little better than the rest."  
YOHO & HOOKER  
Youngstown 2, Ohio

TERRA-LITE SPECIAL PREPARED VERMICULITE.  
Amazing new garden discovery. Proved by tests at a leading university. Cuttings rooted from 3 days to 3 weeks sooner, with bigger, stronger roots! Old-time growers are amazed with results.  
Big bags, approx. 4 cu. ft. or 2 bu.  
5 bags, \$5.75; 10 bags, \$11.50; 20 bags, \$23.00. Sample bag via express, prepaid, \$2.00.  
"We ship same day."  
YOHO & HOOKER Youngstown 2, Ohio

SUPERIOR QUALITY MOSS PEAT.  
pH 4.5, highly organic, fine fibered moss peat. Air-dried to ideal moisture content for best results. Shipped in chemically treated bags for longer service.  
2 bu. ea. 4 bu. ea.  
1 to 25 bags, F.O.B. plant, .... \$1.25 \$1.65  
26 to 50 bags, F.O.B. plant, .... 1.15 1.55  
Write for low bulk prices.  
JUNIUS PEAT CO.  
60 Pearl St. Lyons, N. Y.

GIBRALTAR Frost Covers pay for themselves. Economical, long-lasting. Ideal for windbreaks. 4 ft. wide; 50 ft., \$13.75; 100 ft., \$26.00; 150 ft., \$39.00. NEW AMSTERDAM IMPORT, 123 Chambers St., New York 7, N.Y.

## HEATSUM CABLE.

Roots more cuttings in less time; protects outside saah and water pipes; melts snow in gutters, on walks and driveways. Units available 60 ft. to 1,000 ft. long. Present your problems to our engineers.  
L. N. ROBERSON CO.  
1639 East 103rd St. Seattle 55, Wash.

## MINNESOTA WHITE CEDAR FLATS

12x16x2 1/4	.....	\$18.25 per 100
14x20x2 1/4	.....	22.00 per 100
14x20x3 1/4	.....	25.00 per 100

Other sizes quoted on request. Also crating and other lumber, Aspen and Pine. F.O.B. Cook, Minn. Attach check.

H. C. HILL & SONS, Cook, Minn.

## PEAT MOSS.

Highest-quality acid sphagnum peat moss weighing about 8 lbs. per loose bushel, 120-lb. hydraulic-compressed bales, \$3.25 each; 10 or more bales, \$3.00 each. Large burlap half-bale bags, \$1.60 each; 10 or more, \$1.50 each.  
COLBY PIONEER PEAT CO., Inc.  
Hanlontown, Iowa

NURSERY REQUISITES.  
Budding, Grafting Supplies, "TRE-TEX," Hydrometers, Hygrometers, Magnifiers, Pruning and Spraying Equipment, Ladders.  
Catalog on request.  
Since 1906.  
TYSON ORCHARD SERVICE  
Flora Dale (Adams County), Pa.

SPHAGNUM MOSS.  
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TWO NEW PROPAGATORS' HANDBOOKS. SECRETS OF SUCCESSFUL PROPAGATION, by A. A. Longmire, Carpenteria, California, nurseryman. Many drawings, \$3.00.  
PROPAGATION OF TREES, SHRUBS and CONIFERS, by Wilfrid G. Sheat, distinguished British horticulturist, \$7.50.  
Both just published.  
Write to HORTICULTURAL BOOK SERVICE, 216 S. Detroit Ave., Concord, Calif.

A 1/2-ACRE nursery has been started by Glenn E. Wonsettler at Greensburg, Pa.

A NEW business, Hurricane Plantation Nursery, is being built up by Mrs. Erskine W. Landis, Perkins highway, De Land, Fla.

## PINE RUST FORECAST.

Weather records can be used to forecast spread of disease in the case of rust on the loblolly and slash pines, now widely grown in the lower Gulf area, according to Dr. Paul V. Siggers, forest pathologist, United States Department of Agriculture. The rust, which may attack pines at any age, causes long cankers on the trunks and branches and occurs chiefly in the spring. It is not transmitted from pine to pine but must first pass through a stage that develops on the lower side of oak leaves. This form of infection takes place only in the spring.

In a 10-year study, Dr. Siggers has found that widespread pine infection occurs only when there is warm weather in late winter, particularly in March, followed by cool, damp weather in April. He claims that the seasonal rust hazard can be forecast by the latter part of March from a record of daily temperatures, plus observations on the time when pine cankers form spores and on the general development of oak leaves. Though the usual spring weather in the lower Gulf region is unfavorable for widespread outbreaks of rust, Dr. Siggers points out that, when weather does favor it, forecasts based on results of this study enable nurserymen and others with large plantings of pine to plan spray applications and other control measures.

## PEST CONTROL GUIDE.

In addition to identifying more than 100 insect pests, the new "Pest Control Guide," published by the Sherwin-Williams Co., Cleveland, O., tells how and when to control them, with specific treatments suggested for each insect.

Illustrated by Alma W. Froderstrom, formerly associated with the American Museum of Natural History, the 104-page guide contains more than 300 pictures and many tables. It is designed to give the small grower information on practical controls which can be effected with a minimum of effort.

For quick reference the insect pests are divided into groups such as vegetable, fruit, ornamental, livestock and household pests. The material for the book was compiled from published reports and articles by state and federal agencies and from tests conducted by and for the Sherwin-Williams Co.

THE Chesterfield Nursery has been started by Jack Pittmann at Chesterfield, S. C.



# New Products and Devices

## POWER HOE.

Using the idea of air power pruners, Frank E. King, Woodland, Calif., has developed a power-driven hoe, according to an article on orchard machinery in the December issue of the American Fruit Grower. Using a Schramm compressor mounted on rubber tires, pulled by a small farm tractor, Mr. King swung a boom from the compressor with enough width to plug in as many as twelve hoes to be operated by air power. The hoe shuttles in and out from the lower end of the handle. The worker merely steers the hoe to cut down weeds or thin crops and does not do any lifting or chopping. Mr. King has also developed air power saws, knockers for nut trees and short-handled shears for vineyards.

## DEVICE TO SCARE BIRDS.

Various ways to drive away starlings is a perennial topic among municipal tree men at shade tree conferences. Now from England there comes word that a new type of bird-scaring apparatus will be marketed throughout the British Commonwealth by the Metallic Chemical Refining Co., Ltd.

The unit, weighing less than thirty pounds, is a small acetylene generator. Its two explosion chambers produce detonations at irregular intervals varying between forty and sixty seconds. The explosions sound like the firing of a shotgun and are heard at a radius of over 400 yards.

## DEVICES TREE DIGGER.

Two problems were solved simultaneously when Ralph B. Ricklefs, owner of the Kansas Landscape & Nursery Co., Salina, Kan., and H. P. Adding, manager of the Kanopolis reservoir, made a deal recently. The company will give 500 trees to the engineers at the reservoir who need them for landscaping, in return for which the engineers are providing the workmen to help in the operation of a new tree-digging device invented by Mr. Ricklefs, who has 1,000 young saplings to be dug.

The new apparatus, which can do the work of ten men, it is claimed, is made like a scoop shovel. It is attached to an old truck transmission by cables which wind on two winches, one on each side of the transmission.

When in operation, the shovel is

placed at the end of a row of trees, with the cables running down each side of the row. About 300 feet away, the tractor winds the cables on winches and pulls the plow down the row, uprooting the trees. The trees then are picked up and loaded on a truck.

## NEW BULB PLANTER SHOWN.

Barnett & Wallis, Inc., Pisgah Forest, N. C., demonstrated its new bulb planter, "Little Bill," recently in a field test at Rosemont Gardens, Montgomery, Ala. Although the planter is self-propelling, self-guiding and self-covering, it does not set the bulbs mechanically, but carries two persons in hammock positions who set the bulbs as they are placed in the row by a specially designed hopper. With a crew of three, including these two persons and one man to keep the hopper supplied with bulbs, the machine will set from 7,000 to 8,000 bulbs per hour.

The planter is powered by a

Briggs-Stratton engine which can be adjusted to travel at the rate of twelve, fourteen or sixteen feet per minute. When the feed door on the hoppers is properly adjusted, the bulbs are fed into the row in the required quantity with little attention from the operator.

The hollow steel rollers in the front of the planter have a specially designed coupling that automatically guides the machine in the furrows and at the same time breaks up the clods and prepares the rows. Behind the rollers are small plows which break up the packing that results from the rolling action in the furrows. The covering blades in the rear of the planter are adjustable to any angle.

Duke Paterson, manager of the bulb farm at Rosemont Gardens, has estimated that with the new bulb planter and a crew of three men, 25,000 bulbs can be planted in four hours and ten minutes, whereas it formerly took fifteen men nine hours to complete this operation.

## PLASTIC PRESERVATIVE.

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**WANTED**—To design landscape plans for nurseries on a 10-per-cent-of-the-cost-of-material basis. Minimum fee, \$100.00. Send a rough sketch, giving exact dimensions, showing location of walks, drives, windows, doors, etc. Will design a detailed planting plan to scale. H. J. BAKER, Landscape Architect, Crawfordsville, Ind.

**HELP WANTED**—Landscape and nursery foreman to take charge all branches of work. Unusual opportunity for highly profitable connection with one of the largest concerns at Philadelphia. Highest salary with bonus for man qualified. Write Box 614, care of American Nurseryman.

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**SITUATION WANTED**—young man, who likes growing, but is mechanically inclined, to invest in a beginning concern. Will receive dividends as the business grows. Write giving all essentials. Write Box 619, care of American Nurseryman.

### FOR SALE

Well known landscape nursery in central Michigan, 50 acres specimen stock, 20 acres woodland containing many valuable seedlings. Excellent home, all modern. Complete equipment. Two greenhouses, storage pits, work shop, tool shed, tools, basement, barn, office and drafting room, 2 wells and pumps; in fact, all equipment necessary. Orders for spring, 1949, on books. Located on U. S. highway and fine side road. Will sacrifice for \$48,500.00; \$15,000.00 cash, balance on time. Exceptional opportunity for young person. Owner in poor health and is unable to carry on. Address Box 607, care of American Nurseryman.

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Experienced grower to take charge of nursery production. Housing available. Lifetime position. State salary desired.

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P. O. Box 247 Hankinson, N. Dak.

**FOR SALE**—Well established landscape gardening and nursery business, excellent location, high-class clientele. South shore Long Island, N. Y. Fully equipped, including 1947 truck, Rototiller, tools, land for growing stock and business headquarters. Retiring. Write Box 618, care of American Nurseryman.

**SITUATION WANTED**—Married man, age 35, one child, would like on-the-job training for veterans. Raised on nursery; diploma in landscaping, home-study course. Interested mainly in landscaping, experienced supervising small jobs. Can start immediately. Own car. Write: R. J. LUCKHARD, Rt. 1, Littlefield, Tex.

fruits and vegetables and which has been tested as a protective coating for trees, bulbs, roses and perennials to prevent them from dehydrating during transplanting, shipping and display has been announced by W. S. Richardson, president of B. F. Goodrich Chemical Co., Cleveland, O., after three years of intensive research on the product. Called Good-rite vinyl resin latex, the product, by virtue of the continuous, relatively impermeable film which it forms, seals in the moisture vital to plants and produce if they are to remain fresh after being dug, cut or picked. A colloidal dispersion of vinyl resin in water, this plastic coating dries quickly at ordinary room temperature and forms a transparent odorless film less than one-thousandth of an inch thick. It may be applied with a spreader, roller or brush, sprayed on with either a hand or mechanical sprayer or used as a dip.

Tests have been conducted on a variety of nursery stock; flowers, including roses, gardenias and orchids; vegetables and fruits, both pome and citrus, and a variety of applications are seen for the new product. Among the uses of interest to nurserymen in particular is for coating plants during transplanting.

Tests have shown that a coating of Good-rite vinyl resin latex applied to plants during transplanting will greatly reduce transpiration, cause root systems to recover more rapidly, minimize shock, increase survival and produce fruit sooner, all of which may allow for a longer digging and transplanting season.

When white spruce trees were transplanted bare root in midsummer and alternate trees were treated with Good-rite vinyl resin latex and all left unwatered, the untreated trees were dead at the end of thirty days, while the treated ones were living, with only one out of every four trees showing an appreciable damage sustained during transplanting.

Another use is as a supplement in insecticidal and fungicidal mixtures, where it is said greatly to prolong the life of many of these materials, increase their effectiveness and allow others to be usable when by themselves they are ineffective. As a supplement with 2,4-D, it makes the use of this material safer, permitting the kill of plants otherwise impossible with 2,4-D alone. Results obtained by adding the plastic coating in solutions with 2,4-D or as a coating over plants previously treated with this material indicate that the effect of 2,4-D is greatly increased.

As a preservative coating on cut



**BLACK WALNUT**  
—leaf spot  
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### PURATIZED AGRICULTURAL SPRAY

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- A LOW-COST SPRAY PROGRAM
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Use **PURATIZED AGRICULTURAL SPRAY** to control scab and black rot or frog-eye leaf spot on apple trees; scab and fire blight on pear trees; brown rot blossom blight on cherry trees; brown rot blossoms blight and leaf curl on peach trees.

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plants, Good-rite vinyl resin latex may be used for Christmas decorations, eliminating the nuisance of needle drop and keeping the tree, wreath or holly fresh and green. According to tests made by B. F. Goodrich Chemical Co., in which cut evergreen trees were sprayed with the plastic material and kept in a room with a minimum temperature of 85 degrees Fahrenheit, trees appeared forest-fresh for ten days and longer and dropped only a thimbleful of needles in fifteen days, while similar untreated trees lost many of their needles in three days and were practically bare within a week. Moisture loss on Norway spruce, with which rapid needle drop is usually associated, was reduced about fifty per cent.

## REGISTRATION OF CITRUS IN RIO GRANDE VALLEY.

A program to eliminate psoriasis, or scaly bark, from the citrus trees of the lower Rio Grande valley is being carried out by the Valley Nurserymen's Association, the Texas state department of agriculture and the Lower Rio Grande Valley experiment station.

Realizing the need for such a program in 1946, members of the Valley Horticultural Club held meetings and discussed the problem of scaly bark on citrus trees. In March, 1948, they arranged for Dr. H. S. Fawcett, department of pathology, University of California, Berkeley, to inspect orchards in all parts of the valley. Dr. Fawcett recommended setting up a program for registration of parent trees for budwood.

At a special meeting of the Valley Horticultural Club to consider these recommendations, the Valley Nurserymen's Association was formed, and J. B. Chambers, Jr., was elected president; G. W. Linnard, McAllen, Tex., vice-president, and Walter Bach, Weslaco, secretary-treasurer. The association then employed Carl Waibel, tree surgeon, Weslaco, and sent him to California to study under Dr. Fawcett. Later Mr. Waibel became nursery inspector of plant quarantine for the Texas state department of agriculture.

The program for the elimination of scaly bark calls for the inspection of parent trees free from psoriasis and any other known transmissible disease. Parent trees to be used as a source of budwood for propagation of citrus trees must be at least 8 years old. The selected tree is examined carefully for evidences of disease, and then the four adjacent trees are checked. If all are disease-free, the

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one selected tree is listed for possible registration. Parent trees to be registered must show no symptoms of psorosis for one year, plus an extra inspection of the second spring flush. A tree that passes all these tests will be registered for three years and must be inspected again before this period is extended.

Mr. Waibel has reported that it will be the spring of 1950 before any trees are registered and the spring of 1951 before nurserymen will have registered trees for sale. During the past year 16,891 parent trees have been inspected and 452 of these selected as suitable to test further for possible registration as psorosis-free. In addition, about 200,000 one to 2-year-old nursery trees have been inspected for leaf symptoms of psorosis, and 36,000 of these were found to have these symptoms. They were rogued out by the nurserymen and prevented from reaching groves.

Though this program has begun chiefly to develop trees free from psorosis, it is leading to citrus trees free from other diseases and to better quality fruit and stabilization of the market for trees.

#### PLANT DISEASE KILLERS.

Although results of experiments on the use of penicillin to combat plant diseases made by research institutions, including the United States Department of Agriculture bureau of plant industry, soils and agricultural engineering, have proved negative in most cases, tests on plants with crown gall have shown that the drug has some promise as a control for this disease.

A number of other antibiotics, or killing drugs, from various molds have been tested, both at state agricultural experiment stations and in Europe, according to Dr. Freeman Weiss, plant pathologist of the United States Department of Agriculture. One, he said, shows promise experimentally against certain crop mildew diseases, including powdery mildew of beans, and some have given promise of antibiotic aid against a variety of unfavorable fungi.

In a recent address as retiring president of the Washington Botanical Society, Dr. Weiss mentioned the newly famous mold, *Penicillium notatum*, source of the antibiotic drug, penicillin, as a shining example of a fungus "weed," revealed as such because of its interference with the growth of a bacterial culture. He believes that other potent products may be found, not only in molds and other fungi, but also in bacteria, algae, seed plants and even insects.

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# Ohio Short Course for Arborists

By Donald E. Erskine

## FOUNDATION PLANTINGS.

The designing of a foundation planting is a trying problem, principally because it is such a constantly recurring one. Generally speaking, the foundation planting should be predominately composed of evergreen plants. The average client wants the planting to create a conservative effect.

These were the opinions expressed by Prof. Brooks Wiggington, department of landscape architecture, University of Georgia, Athens, in his talk on "Design in Foundation Planting" at the recent short course for arborists and landscape gardeners sponsored at Columbus, O., by Ohio State University.

First of all, there are certain functional factors to be considered in the treatment of the average front yard, and these influence the planting design. There is the location of the front walk and usually the driveway. These should be direct and as inconspicuous as possible.

Next in importance is the proper placement of shade trees, which can add much to the comfort and livability of the home. Trees are especially essential when the living room faces west or northwest. The value of trees in the plan is of primary importance in giving any foundation planting a generally satisfying appearance.

It is possible, with narrow frontages and shallow setbacks, to make use of the dooryard garden. This offers privacy in the out of doors. Today the service facilities, particularly the kitchens and garages, often face the street. This arrangement allows a more pleasant planning of the lot as a whole, but it usually affects the plan of the foundation planting.

The architecture of the home might, for convenience, be considered as formal or informal. The formal type is characterized by smooth, neat lines which cast light shadows. Plants of a refined character will harmonize with this type. The layout should be restrained, possibly symmetrical, and overplanting should be avoided. Informal buildings cast heavier shadows and are usually unsymmetrical, coarser in texture and darker in color. For these buildings, massive plantings are more appropriate.

The design qualities of the plants to be used also must be stud-

ied. These qualities are form, color and texture. The term "form" is used to include shape and size. Usually larger forms are used at the corners or ends of buildings to tie the stiff architectural lines to the ground, and the lower forms are arranged across the front. Plants of striking form should be used sparingly, as they create disunity. Small flowering trees may have a place at the ends of a foundation planting. It must be remembered that foundation plantings have depth as well as height and width, said Professor Wiggington.

Positive forms should be used at points which deserve to be accented, such as at each side of the front door. In a stiffly symmetrical scheme, an incidental feature in the planting, such as a vine casually placed off balance, will give the natural softening which one expects in plants.

Foliage is the most important consideration when planning color. Here, again, there is little demand for the bright-colored foliage which attracts attention because it looks unnatural.

A plant's texture is determined by the size of its leaves and the density of their arrangement on the stem. These factors have a pronounced effect on the appearance of lights and shadows playing over the form. The winter effect of deciduous plants also is important. Coarse-textured plants would more often be used with an informal type of architecture and fine-textured ones with a formal type. Through constant association with plants, the recognition of these qualities becomes a matter of habit.

The first aim of landscape design is to create a restful garden picture. There must be a basic harmony between the character of the dominating architectural form and the character of the plants to go with it. Of course, there must be some variety in these materials to prevent monotony, but this variety always is introduced in accordance with an underlying unity.

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Professor Wiggington said in conclusion that there was nothing new in the thoughts and suggestions contained in his talk and that they represented merely the age-old principles of art applied to the world of plants as interpreted by numerous skilled plantmen. However, if one feels unsure of himself in this one small but important phase of his work and fails to find the inspiration which makes this work alive and interesting, then, perhaps, it is time to restudy these principles, said the speaker. For each case is a new and individual problem, calling for a solution which is unique and appropriate in itself.

### TREE DAMAGE BY 2,4-D.

Some of the possibilities of damage to trees and shrubs by the use of 2,4-D were discussed by Dr. Paul E. Tilford, executive secretary of the National Arborist Association, at the short course for arborists and landscape gardeners held January 12 to 14 by Ohio State University, Columbus. In his talk, "Lawn Applications of 2,4-D May Damage Trees," Dr. Tilford pointed out that 2,4-D has been put to many uses, often without sufficient research. As a result, much damage has occurred.

The original material to be used was the acid form of 2,4-D (2,4-dichlorophenoxyacetic acid). This is a white powder, insoluble in water, and is applied as a dust. It is used little today. There are three different chemical forms of 2,4-D in common usage at the present time. These are the sodium salt, the amine and the ester of 2,4-D. The sodium salt has been used much. It is a white, soluble material, which is the least effective as a plant killer and is the cheapest form of the compound.

The amine of 2,4-D can be purchased in both liquid and solid form. It is intermediate between the sodium salt and the ester, both in price and plant-killing properties.

The ester form, which is an alcohol derivative of the acid, is marketed principally in the liquid form. It is volatile and is the form most potent in plant-killing properties. It is slightly more expensive than the other two forms.

Dr. Tilford gave many examples of specific cases where serious damage had been caused to trees and shrubs by the use of 2,4-D in one form or another. Drift due to wind commonly causes damage to trees and shrubs near the area being treated. This can be partially overcome by the use of guards of various types which are fastened to the applicator

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and confine the mist. Spraying, of course, should be limited to windless days. Drift can be further controlled by operating the equipment at pressures below 100 pounds.

Contamination of the sprayer often occurs when the same piece of equipment is used for 2,4-D application and for insect and disease control. Especially difficult to remove from the sprayer because of its oil nature, 2,4-D will cause damage even at high dilutions. Ideally, a separate sprayer should be used for 2,4-D only. The esters are particularly difficult to remove.

The following procedure should be followed in removing 2,4-D residue from the sprayer:

1. Remove gun, which is used for 2,4-D only.
2. Fill tank with clear hot water and add one gallon of household ammonia per 100 gallons.
3. Turn the hose back into the tank and pump this solution through the machine until it has cooled.
4. Pump solution out.
5. Repeat steps 2 and 3.
6. Let solution stand overnight in tank.
7. Pump solution out.
8. Fill tank with clear cold water.

A third source of trouble has been contamination of other spray materials which are processed in the same factory with 2,4-D. This situation occurred during the early development of 2,4-D and has been largely overcome since then.

If a glass jar containing 2,4-D is left open or broken in storage where other spray materials are stored in open containers, these materials will absorb the 2,4-D, particularly if it is in the ester form.

Cases have been cited where the ester of 2,4-D was used about the base of 12 and 15-foot trees. These trees were in full leaf, and no damage was apparent after the spraying. However, during the following year, characteristic symptoms of 2,4-D injury developed on the new foliage. Thus, sufficient 2,4-D vapors were absorbed by the buds to cause distortion of the next year's foliage.

In conclusion Dr. Tilford pointed out that forsythia is particularly susceptible to 2,4-D damage and can be used as an indicator of its presence in an area.

#### HEMEROCALLISES.

Slides showing many of the newer varieties of hemerocallis illustrated a talk on that subject by Mrs. J. F. Emigholz, Kenwood Iris Gardens, Cincinnati, O., at the recent short course for arborists and landscape

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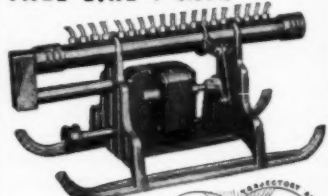
gardeners sponsored by Ohio State University, Columbus.

About twenty-five years ago hemerocallis, or day lilies, attracted the attention of English and American hybridizers, and, as a result, there is a widespread enthusiasm for them today. They are ideally suited to the climate of the midwest.

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hemerocallis hybridizers were Charles Betscher, Dover, O.; Mrs. Nesmith, Lowell, Mass.; the Sass brothers, Nebraska, and Dr. A. B. Stout, New York Botanical Garden, Bronx. Dr. Stout's book, "Day Lilies," gives

much valuable information, said Mrs. Emigholz.

The best known of the newer hybridizers are Donald Milliken, Milliken Gardens, Arcadia, Calif.; Russell Gardens, Spring, Tex., and R. W. Wheeler, Winter Park, Fla.

The Midwest Hemerocallis Society, founded two years ago, has held two annual meetings at Shenandoah, Ia., where it maintains a large garden for testing the better varieties.

In growing day lilies for landscaping and selling, one must, of course, select the colors most in demand. In general, women prefer pale yellows and pastel shades, some reds or orange, but few heavily banded or marked varieties. Men like the reds, especially the dark shades, and orange or other vivid colors. Thus, a wide variety of colors to suit all tastes should be selected.

Hemerocallis are unequaled for landscape planting, said Mrs. Emigholz, and can be used effectively to naturalize on hillsides, in open areas and around pools. They grow well in sun and will take partial shade. Care is limited to keeping down the weeds, cutting off the old flower stalks and cleaning up the dead foliage in early spring before new growth starts. Good drainage also should be maintained. Rain during the blooming season increases the flower size considerably. The plants, which are pest-free, vary in height from eighteen inches to four or five feet, although the best height for landscaping is about three to four feet. The blooming period lasts from three to four weeks.

The best colors to plant with day lilies are blue, white and lavender. Blue and white irises can be planted with the early varieties. *Anchusa myosotidiflora*, the blue and white columbine and the dwarf white *deutzia* can also be used. *Virginalis* mock orange, Japanese irises and *Lilium umbellatum* make good arrangements in June. George Yeld and other orange tones of hemerocallis with *Cassia marilandica* with its racemes of yellow flowers should be tried in July, said the speaker.

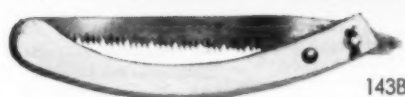
Lavender and white phloxes, tall blue and white platycodons and late Shasta daisies can be planted with the July bloomers. A great many combinations are possible using perennials or small shrubs with different flower and leaf forms.

There are some evergreen forms which are hardy, but the varieties with deciduous foliage are more suitable for the colder climates.

The propagation of hemerocallis is by cutting into single divisions with roots attached; these divisions should



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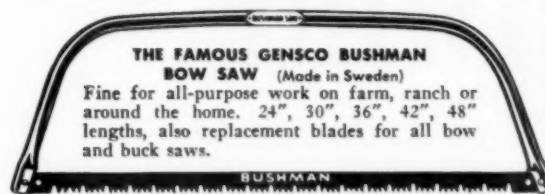


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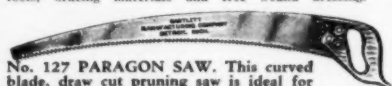
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be planted with the union of the roots and foliage an inch below the surface. Some varieties produce small plants, called proliferations, on the flower stems. These can be removed with a short piece of stem and rooted in sand. Fans which have been broken off during division can be cut back, dipped in a rooting medium, placed in moist sand and shaded for a few weeks. They will be ready to set out in the spring. Often the crown is cut into halves or quarters, and these pieces are reset.

The plants can be reset at any time if they are handled with care and watered well until established. The best time for shipping the plants bare-root is in the early spring, before growth has advanced too far, and after blooming time in August until early October. Their blooming season at Cincinnati is from the middle of May until August 10.

### Worth-while Annuals.

The subject of "Worth-while Annuals" was covered by Arthur Hirt, Hirt's Strongsville Greenhouses, Strongsville, O. He discussed the varieties which he is growing at the present time, stating that he grows all of his seedlings in flats and does little potting of plants. Mr. Hirt believes that plants grown correctly in flats are as good as those grown in individual pots. In the flats he uses compost to which a complete fertilizer has been added, and he fertilizes all of his plants three times with sulphate of ammonia applied with a Hozon nozzle.

The following are some of the annuals which Mr. Hirt grows: Ageratum Blue Perfection (medium height); Alyssum Little Gem and Violet Queen; Amaranthus Splendens and Joseph's Coat; Arctotis grandis; aster, American wilt-resistant; Crego and California Sunshine; Begonia Snow and Christmas Cheer; Calendula Lemon Queen; celosia, red and yellow types, and Cosmos Sensation.

Other annuals grown by Mr. Hirt include the following petunias: Glamor, salmon-pink; Glow, dwarf carmine-red; Irene; Pride of Wurtenburg; Snowstorm, white; Cheerful, salmon-pink; Celestial Rose, dwarf, compact, small flower; Cream Star, dwarf; Heavenly Blue, small flower; Twinkles, pink and white; Violet Bell, best blue, and Igloo, dwarf white. Also on his list are Phlox drummondii, dwarf strains; Salvia St. John's Fire and Blue Bedder; scabiosa, caucasica types; snapdragon, Sky-scraper types; torenia, blue and white types; verbena, old type and Defiance, and zinnia, dahlia-flowered types and California giant types.



**PEACH TREE TROUBLES.**

[Continued from page 10.]

earlier recommendations that nursery inspection and removal of infested trees help greatly in the control of the trouble.

The X disease, sometimes called yellow-red virus, affects peach trees and chokecherries, being transmitted from the latter, if within 500 feet. X shows on peach tree leaves near June 1, when a yellow mottling is manifest, changing to a reddish one later. In due time the spotted areas on the leaves become dry and brittle and drop out, giving the leaves a tattered appearance. The disease starts locally, but eventually the entire tree becomes affected. The fruit on diseased trees is scarce, small in size and of poor quality. There is no embryo in the pit.

Red suture is one of the new and little understood diseases of peach trees that appears near ripening time. Affected trees mature their fruits five to ten days earlier than healthy ones. The fruit is usually, but not always, highly colored along the suture, or groove, extending from stem to apex. Along the suture there are bulges and soft watery tissues, still further to distinguish the disease. The foliage is yellowish, rolling back slightly from base to tip. In severe cases the leaves sprout from the buds and there are many short shoots on the branches. In this disease, as in phony peach, if the twigs are immersed in water at 48 degrees centigrade for forty minutes, the virus is inactivated, and such treated twigs can be used in propagation.

Asteroid spot, with starlike yellowish spots on fully expanded leaves, and lime-pattern, showing when spring foliage is light green and narrow, with jagged irregular lines, are new disorders of peach trees. However, both these diseases seem to be restricted in distribution and of limited severity. Nevertheless, any suspicious symptoms should be reported for attention.

Brown rot, also known as fruit mold, soft rot, ripe rot, bud blight and twig blight, is a disease of flowers, leaves and fruits, but is most conspicuous on fruits that are nearly ripe. Affected twigs are what give concern to the nurseryman. The flower parts turn brown prematurely, and in moist weather they appear soft and soon rot. Affected shoots and leaves shrivel and dry up, giving an appearance as if from frost. From blighted twigs the disease may spread to the larger limbs. Small fruits may be attacked after the flowering period. On the fruit the disease shows first as small circular spots, brown in color,

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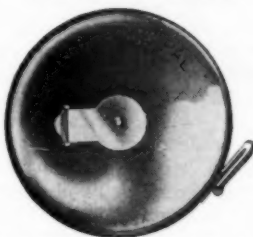
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which may develop rapidly, soften and discolor the peach. In a late stage they are soft, with a powdery exterior. If left on the tree, the fruit becomes hard and grayish-brown. As the fruit usually drops, the fungus carries the disease over winter in the dead fruit, the source of inspection the next spring. Wettable sulphur sprays put on two or three weeks after shucks have fallen will control the trouble. In the nursery the brown rot fungus in the twigs can be cut out and burned. In the orchard, spraying with sulphur sprays will control the disease.

Recent information of this past season reveals the seriousness of some virus diseases. The phony peach disease has taken 1,500,000 trees in the past twenty years and now causes an estimated annual loss of 60,000 trees. This trouble does not kill the trees outright but dwarfs them and makes them unprofitable. Peach mosaic, which reveals yellow mottled patterns in the leaves, dwarfs the twigs and rosettes the leaves, has resulted in the loss of 250,000 trees in the past thirteen years. Eastern and western virus X diseases, which are similar but slightly different, are said to cause a loss of \$500,000 annually. Just recently the virus X disease has been known to affect sour cherries and the wild choke cherry, *Prunus virginiana*, where it causes a brilliant array of red and yellow colors, hence the need to be alert for virus X disease on allied species.

#### Destructive Insects.

A number of insects are injurious to peach trees in the nursery or in the orchard.

The Oriental fruit moth heads the list, the peach tree being its favorite host. The moth is a small gray creature with less than ½-inch wing expanse. The eggs are white, flattened, scalelike and the size of a pinhead. The full-grown worms are pink in color with brown heads. The pupae are cylindrical and brown to black in color. The eggs are laid on twigs, foliage and fruits. Small worms attack tender growing tips and tunnel in them, later attacking the fruit and doing damage similar to that of the codling moth in apples. Exit holes show frass and gum. The most serious feature of this insect is the number of broods, there being four or even five in one season. In control, nicotine pyrethrum and rotenone have been helpful, but not thoroughly eradicated. The use of poison baits seems to reduce the moths, and cultivation of the ground close to the trees destroys many larvae and pupae. Much has been learned of the parasites of the moth, especially on the

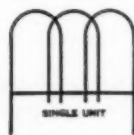


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LENGTH	WT.	Per 100	Per 100	Per 1000
1 1/4 ft.	17 lbs.	\$3.30	\$15.20	\$30.50
2 ft.	30 lbs.	3.80	18.50	36.50
4 ft.	40 lbs.	5.10	24.90	48.50
6 ft.	50 lbs.	6.40	31.00	61.00
8 ft.	60 lbs.	7.80	37.50	72.50

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larvae in twigs. *Macrocentrus* is helpful, while *glyptal* is less so, according to trials in New Jersey. Parasitism of the first two broods was found to be quite effective. DDT is damaging to the insect but is safe on trees.

Peach tree borers are sure to be present wherever peach trees are grown. Injury is done by the boring of the larvae in the trunk just underneath the ground level; large branches are also sometimes attacked.

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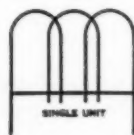
E-Z-GARDS are made of heavy-gauge enamel wire, welded into sturdy and durable units, 21 inches high and 20 inches long. When set up the height can be varied from

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The worms spend the winter as partly grown creatures in their burrows. A fumigant known as para-dichlorobenzene, shortened to para, is now a standard means of control. A ring of it is placed around the base

of the tree (15), but out from it two inches. The para layer is covered with fine soil two inches deep to hinder escape of the fumes. Para is applied in early fall, September or October. The fumes kill the borers.

Recent trials have shown that DDT is an effective aid in the control of peach tree borer. This product has been used at the rate of two pounds of a fifty per cent wettable powder in 100 gallons of spray. Three applications at 3-week intervals were successful. The first spray is put on the second week in July. If further trials confirm those already made, DDT will be found to be a quick and economical way to control borers in trunks of peach trees.

The twig borers (17) are small worms that work just beneath the bark and in the crotches of branches. The third-brood larvae injure late fruit. Delayed dormant applications of lime-sulphur will kill them.

Bark beetles (1) are little creatures with hard wings. Where the little beetles work, evidenced by many small round holes in the bark, the sap may exude, indicating their presence. There are two generations in a year, and they weaken the trees. The destruction of infested wood and small branches will greatly lessen their numbers. Feed the trees well to maintain vigorous growth.

The San José scale is common on peach trees. Its presence is revealed by an ashen gray incrustation on twigs and branches. The flattened and rounded margin is hard, thin and caved, and the insect holds it next to the bark. Dormant-strength lime-sulphur or an oil spray will dispatch them. The scurfy scale is destroyed in the same way.

The terrapin scale (16) is one of the bad ones on peach and maple trees. It is one-sixth inch long and hemispherical in shape and distributes itself singly on branches and twigs. The color is matted or striped with distinct ridges, which radiate from the central exterior. When crushed, the insects emit a nauseating odor. The eggs under the scale are a pale yellow. The insect matures in June, and the single generation of eggs comes late in June or July. To control this creature, spray the trees when dormant with an oil contact solution, doing it on warm, dry days when the spray spreads well.

Curculio is a snout beetle nearly brown or dark gray and much smaller than the potato beetle. It injures the fruit by forming crescent-shaped scars (10) on the cheek of the peach. The beetles winter over in the soil or trash and emerge soon after bloss-

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soming time. Arsenate of lead, two pounds to 100 gallons of water or one teaspoonful to a gallon, at weekly intervals three times after the blossoms drop, will suppress them. Spray again twice in August. It is urgent to clean out fence rows, brush piles, stone walls and other hibernating shelters. Pick and destroy affected fruits soon after they drop.

Peach aphid (7) is a black louse that sucks the juice from the leaves, thus devitalizing them. The leaves become pale and curled and may drop. Control is achieved by an oil spray before the buds open in the spring, or in the summer by the use of standard strength Black Leaf 40.

In brief, it is seen that there are ten diseases and eight insects of the peach tree or its fruit. All of them are more or less destructive almost every year. Healthy nursery stock is a prerequisite to a good reputation as a nurseryman. A satisfied customer is one of the best advertisements a nurseryman can have.

### BLACK WALNUT NONTOXIC.

The popular belief that black walnut trees have a poisonous effect on neighboring plants has been disproved by plant scientists of the United States Department of Agriculture. Reports have appeared from time to time stating that injury to certain plants, such as potatoes, tomatoes, alfalfa, apples, peaches and other crops, has resulted from a toxic organic compound known as juglone which is supposed to be given off by the roots of the black walnut tree. The name of the compound is derived from the botanical name of the black walnut, which is *Juglans nigra*.

Two varieties of tomatoes were planted under large, bearing black walnut trees to determine whether this poisonous effect really exists or whether the observed injury might be caused by the competition between the plants for water and nutrients. It was found that when the tomato plants were supplied with water and nutrients they produced as good a crop of fruits as could be expected under the condition of poor sunlight beneath the walnut trees.

THE new address of Van Hof Nurseries is Bristol Ferry road, Portsmouth, R. I. They were formerly at Middletown, R. I.

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